

EXHIBIT 9

Claims Chart

US9642024

Claims 1-5

Contents

1. Claims	3
2. Claim Element	6
3. Claim Chart	8
4. Attachments.....	56

1. Claim #1: A system including:

one or more radio-frequency transceivers (exhibit A) and an associated one or more antennas to which the radio-frequency transceiver (exhibit A) is coupled, wherein the one or more radio-frequency transceivers (exhibit A) configured for radio-frequency communication with at least one mobile wireless communications device (exhibit); and a computer (exhibit C) coupled to the one or more radio-frequency transceivers (exhibit A) programmed to locate the one or more mobile wireless communications devices (exhibit B) and generate an indication of a location of the one or more mobile wireless communications devices (exhibit B), wherein the computer (exhibit C) further receives and stores performance data of connections between the one or more mobile wireless communications devices (exhibit B) and the radio-frequency transceiver (exhibit A) along with the indication of location, wherein the computer (exhibit C) references the performance data to expected performance data, wherein the computer (exhibit C) determines at least one suggested corrective action in conformity with differences between the performance data and expected performance data in conjunction with the indication of location, wherein the computer (exhibit C) further receives an error code from the radio-frequency transceiver (exhibit A), determines whether the error code indicates a performance issue with respect to the connection between the one or more mobile wireless communications devices(exhibit B) and the radio-frequency transceiver (exhibit A), and wherein the computer (exhibit C) determines the at least one suggested corrective action in response to the error code.

Claim #2: The system of claim 1, wherein the computer (exhibit C) further determines the at least one suggested corrective action in conformity with a value of the error code.

Claim #3: The system of claim 1, wherein the one or more mobile wireless communication device (exhibit B) s comprises two or more mobile wireless communication devices (exhibit B), each of the two or more mobile wireless communication devices (exhibit B) communicating via radio frequency electromagnetic signals, wherein the computer (exhibit C) is computer programmed to routinely, identify performance data and a corresponding location for each of the two or more wireless communication devices (exhibit B), and store in a memory the performance data and the corresponding locations for each of the two or more mobile wireless communication devices (exhibit B), and wherein the one or more radio-frequency transceivers (exhibit A) and one or more associated antennas comprise a radio tower in communication with said computer (exhibit C) and with the two or more mobile wireless communication devices (exhibit B), the radio tower adapted to generate an error code based upon operation of the radio tower and wherein the computer (exhibit C) is further programmed to selectively suggest the at least one corrective action as a corrective adjustment of said radio frequency electromagnetic signal emitted by the radio tower so as to restrict processing radio frequency electromagnetic signals from one of the two or more mobile wireless communication devices(exhibit B) based upon the error code.

Claim #4: The system of claim 1, wherein the two or more mobile wireless communication devices (exhibit B) transmit performance data; and wherein the computer (exhibit C) is further programmed to receive the performance data and to accordingly identify the location of each of two or more mobile wireless communication devices (exhibit B).

Claim #5: The system of claim 1, wherein the computer routinely stores updated performance data and an updated indication of location of the one or more mobile wireless communications devices (exhibit B) while the mobile wireless communications device (exhibit B) is communicating with the one or more radio-frequency transceivers (exhibit A).

Claim #1:

Element 1: A system including one or more radio-frequency transceivers (exhibit A) and an associated one or more antennas to which the radio-frequency transceiver (exhibit A) is coupled, wherein the one or more radio-frequency transceivers (exhibit A) configured for radio-frequency communication with at least one mobile wireless communications device (exhibit B).

Element 2: The said system further including a computer coupled to the one or more radio-frequency transceivers programmed to locate the one or more mobile wireless communications devices and generate an indication of a location of the one or more mobile wireless communications devices.

Element 3: The said first computer (exhibit C) receives and stores performance data of connections between the one or more mobile wireless communications devices (exhibit B) and the radio-frequency transceiver (exhibit A) along with the indication of location.

Element 4: The said first computer (exhibit C) references the performance data to expected performance data.

Element 5: The said first computer (exhibit C) determines at least one suggested corrective action in conformity with differences between the performance data and expected performance data in conjunction with the indication of location.

Element 6: The said first computer (exhibit C) receives an error code from the radio-frequency transceiver (exhibit A), determines whether the error code indicates a performance issue with respect to the connection between the one or more mobile wireless communications devices (exhibit B) and the radio-frequency transceiver (exhibit A) .

Element 7: The said first computer (exhibit C) determines the at least one suggested corrective action in response to the error code.

2. Claims Chart:

This Claims chart details the various elements of each of the independent claims of Patent application of Reed et al and relates it to the corresponding aspect(s) of the product or technology used / being used / marketed by **M/S Samsung** and/or their subsidiary(ies) / clients / collaborators.

Operations and Management solutions:

Smart SON:

Samsung Smart SON includes standard SON self-configuration/optimization/healing functions such as Automatic Neighbor Relation, capacity coverage optimization and cell outage compensation but also unique features such as Drive test optimization, Transmit Power Control and Antenna tilt optimization.

Smart Scheduler:

Smart Scheduler controls all cells as virtually one cell, or in other words centralizes radio resources management, in order to improve the allocation pattern, mitigate interference and maximize throughput.

CognitiV Analytics:

CognitiV Analytics, is a real-time data processing tool that collects and analyzes data from various sources, including both network elements and user device data, to provide analytics on network, service and users.

The 3 products offer their own benefits but optimum performance and maximum value is obtained by combining them. For example, Smart SON can use real-time RF information from the Smart Scheduler and network and service analysis from CognitiV Analytics to command eNodeB's transmit power or antenna tilting angle instantly.

By combining Samsung Smart SON and Smart Scheduler with CognitiV Analytics, operators can manage load and resources allocation, reduce inefficiencies and ultimately optimize their QoS and QoE.

As it helps operators to improve and automate their service operations, Samsung solutions limit the need for highly skilled human resources and to reduce operational expenses. Personnel can thus be affected to more profitable activities.

Efficiency can also be improved in the pre-service phase. Indeed, Smart SON reduces the need to conduct time-consuming and costly drive-test and enables faster and optimized roll-out at a reduced cost.

CognitiV Analytics provides detailed networks, services and users analytics useful to optimize network operations and utility. But beyond that, the large amount of data collected and analyzed carries extra value.

Such data can indeed enable new value added services. Location-based services, context-aware applications, differentiated QoE services, targeted advertising are all promising fields that raises a growing interest among operators, OTT players, application developers and advertisers.

Samsung team of experts are dedicated to offer tailored services to every single operator and will help them to integrate and use CognitiV Analytics in order to get the most value of it. Samsung solutions work along other vendors' equipment.

Potential Infringing Product(s) and Service(s):

**Operations and Management solutions
(Self-Optimizing Network solutions)**

- Smart SON
- Smart Scheduler
- CognitiV Analytics

<http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/>

Related Product(s) that include any or any combination of the aforementioned solutions:

- Samsung's LTE solutions
- Smart LTE
- Smart Networks
- High Density Cell Solutions
- LTE-Advanced network solution
- LTE-FDD network solutions
- LTE-TDD network solutions
- C-RAN; C-RAN 2.0

CLAIM #1

S.No.	Element of Claim #1	Corresponding aspects in use by/marketed by M/S Samsung	
1.	A system including one or more radio-frequency transceivers (exhibit A) and an associated one or more antennas to which the radio-frequency transceiver (exhibit A) is coupled, wherein the one or more radio-	Explanation of Manner of use by the potential infringer	<p>Samsung's solutions – Smart SON, Smart Scheduler and CognitiV Analytics (exhibit C) - are designed to monitor, manage, optimize and troubleshoot the client's wireless cellular telecommunication network in real or near real-time.</p> <p>A typical wireless cellular telecommunication network serviced by Samsung's solutions (Smart SON, Smart Scheduler and CognitiV Analytics) (exhibit C) comprises a plurality of RF transceivers or base stations (exhibit A) – eNodeBs, small cells, micro cells and macro cells – communicating wirelessly through RF signals with a plurality of mobile wireless communication devices (exhibit B) like mobile phones, PDAs, laptops, tablets and mobile navigation devices etc.</p> <p>The said base stations invariably contain one or more antennae.</p>

	frequency transceivers (exhibit A) is configured for radio-frequency communication with at least one mobile wireless communications device (exhibit B).		For many client wireless cellular telecommunication networks Samsung provides C-RAN or C-RAN 2.0 for centralized control of RAN elements.
		Evidence	1) Fig. 1, 2 & 3; 2) Attachment #1 & #2.

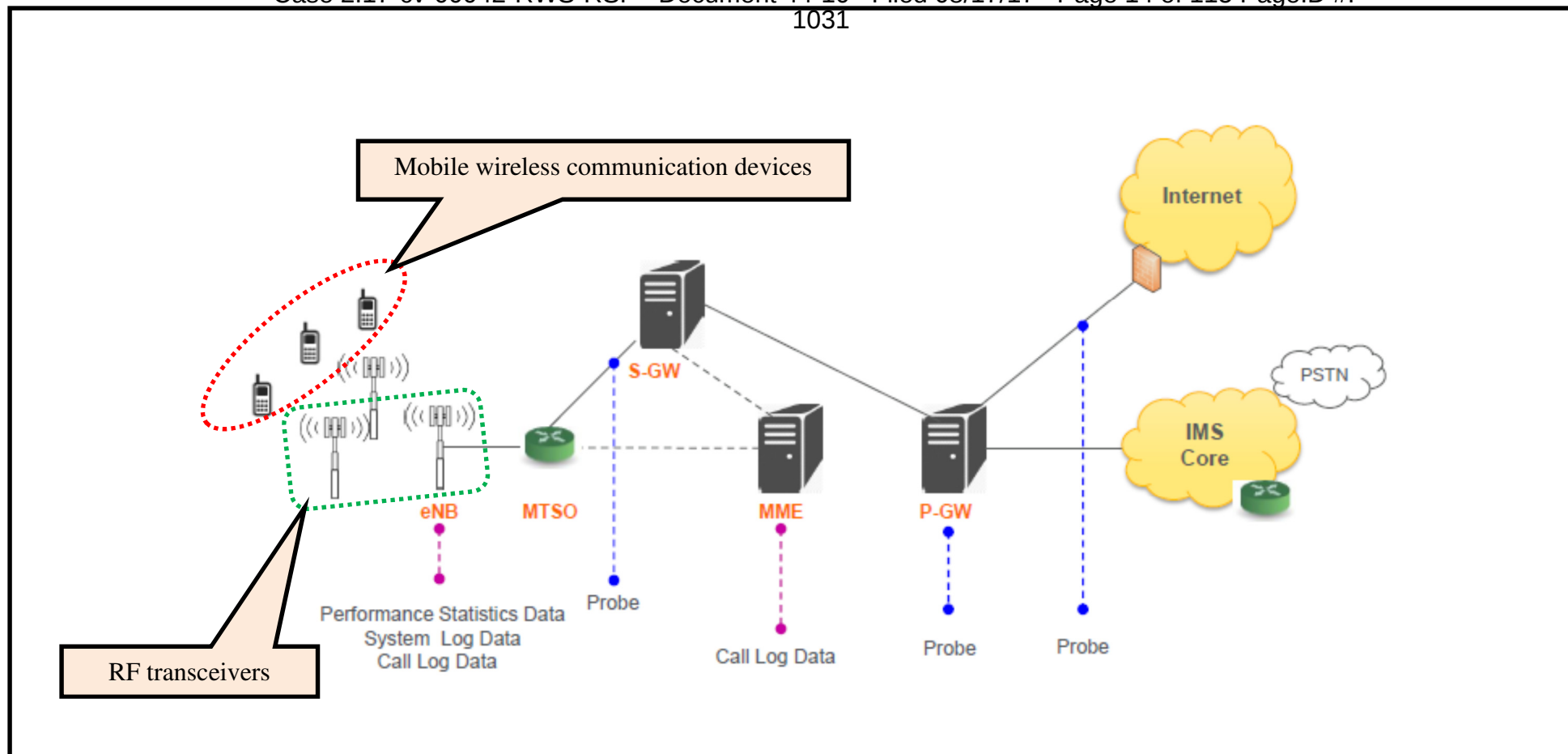


Fig. 1: A typical wireless cellular telecommunications network serviced by Samsung's solutions.
 {Source: Attachment #1 (Pg. 4)}

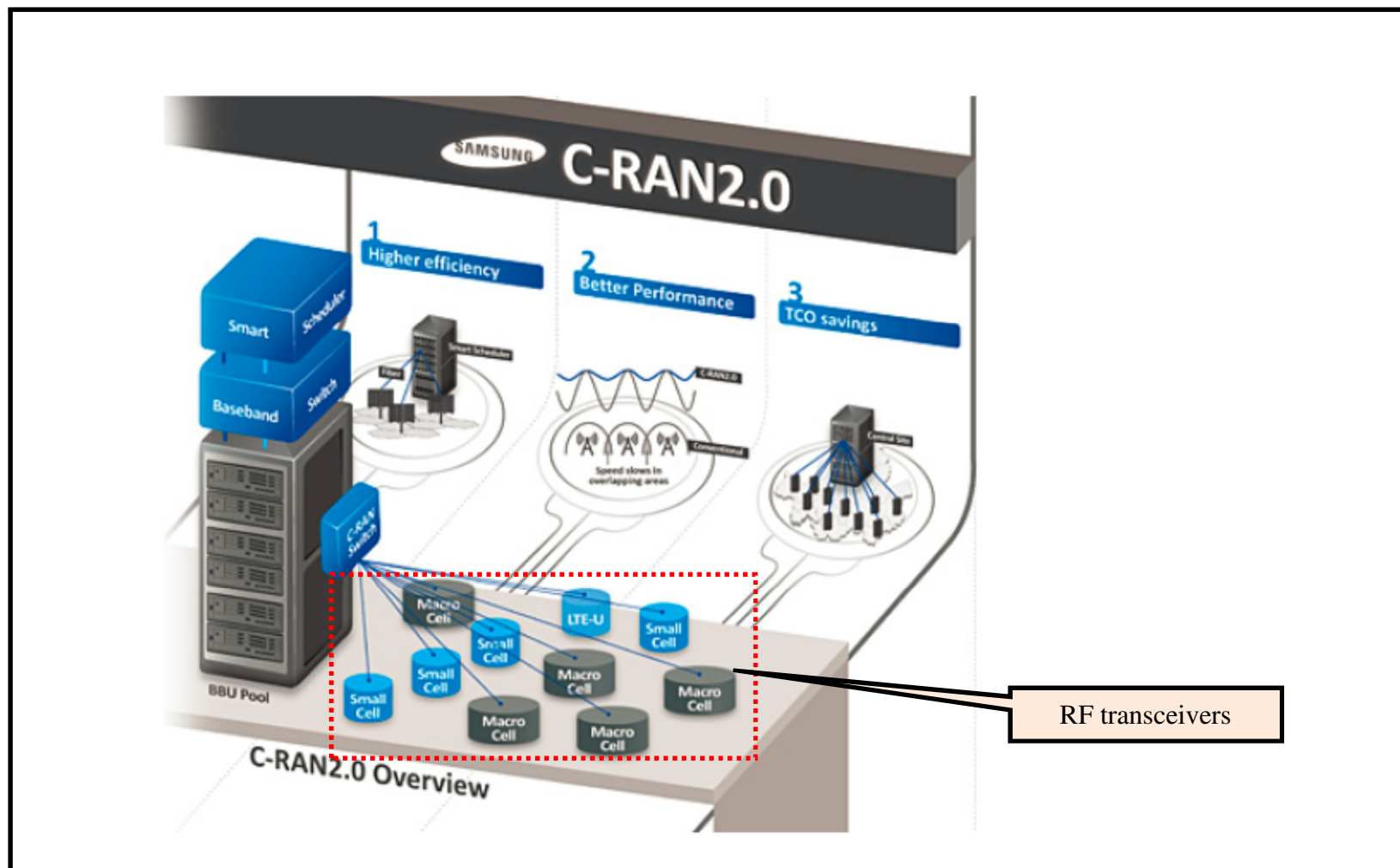


Fig. 2: Samsung C-RAN 2.0 (centralized RAN) – All base stations (Small cells, micro cells and macro cells) are controlled through a central C-RAN switch. {Source: Attachment #2 (Pg. 1)}

<http://www.samsung.com/global/business/networks/solutions/solutions/centralized-ran/>

C-RAN2.0 introduces several key concepts which enable considerable reduction and optimization of both capital and operating expenditures. By shifting the baseband unit from the cell site to a centralized location, significant savings can be realized from a reduced footprint at the edge. Whether an operator leases or purchases tower sites, reducing a typical cell site deployment to a radio unit and an antenna not only reduces the needed area, but also improves deployment options since the baseband cabinet is often the most bulky and restrictive component of a typical base station.

Fig. 3: Samsung C-RAN 2.0 (centralized RAN) – reduces typical cell site deployment to a radio unit and an antenna.
{Source: Attachment #2 (Pg. 3)}

<http://www.samsung.com/global/business/networks/solutions/solutions/centralized-ran/>

S.No.	Element of Claim #1	Corresponding aspects in use by/marketed by M/S Samsung	
2.	<p>The said system further including a computer (exhibit C) coupled to the one or more radio-frequency transceivers (exhibit A) programmed to locate the one or more mobile wireless communications devices (exhibit B) and generate an indication of a location of the one or more mobile wireless communications devices (exhibit B).</p>	Explanation of Manner of use by potential infringer	<p>Samsung's client wireless cellular telecom network's Operations Support System (OSS) containing a computer/processor or an interconnected network of computers/processors containing Samsung's solutions, namely Smart SON, Smart Scheduler and CognitiV Analytics, constitutes the "Computer" (exhibit C).</p> <p>The Smart Scheduler (exhibit C) controls all cells as virtually one cell, or in other words centralizes radio resources management, in order to improve the allocation pattern, mitigate interference and maximize throughput.</p> <p>CognitiV Analytics (exhibit C), is a real-time data processing tool that collects and analyzes data from various sources, including both network elements and user device data, to provide analytics on network, service and users. The collected data includes user (UE) (exhibit B) location information.</p> <p>Smart SON (exhibit C) can use real-time RF information from the Smart Scheduler (exhibit C) and network and service analysis from CognitiV Analytics (exhibit C) to command eNodeB's transmit power or antenna (exhibit A) tilting angle instantly.</p>
		Evidence	<p>1) Figs. 4, 5 & 6; 2) Attachments #3 & #4.</p>

Samsung Smart SON includes standard SON self-configuration/optimization/healing functions such as Automatic Neighbor Relation, capacity coverage optimization and cell outage compensation but also unique features such as Drive test optimization, Transmit Power Control and Antenna tilt optimization.

Our Smart Scheduler controls all cells as virtually one cell, or in other words centralizes radio resources management, in order to improve the allocation pattern, mitigate interference and maximize throughput.

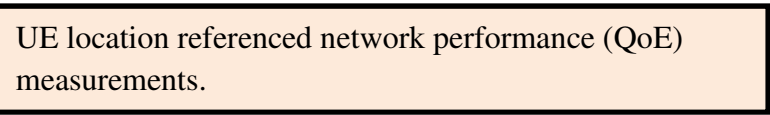
The third product, CognitiV Analytics, is a real-time data processing tool that collects and analyzes data from various sources, including both network elements and user device data, to provide analytics on network, service and users.

The 3 products offer their own benefits but optimum performance and maximum value is obtained by combining them. For example, Smart SON can use real-time RF information from the Smart Scheduler and network and service analysis from CognitiV Analytics to command eNodeB's transmit power or antenna tilting angle instantly.

By combining Samsung Smart SON and Smart Scheduler with CognitiV Analytics, operators can manage load and resources allocation, reduce inefficiencies and ultimately optimize their QoS and QoE.

Samsung's Smart SON, Smart Scheduler and CognitiV Analytics together constitute the "Computer".

Fig. 4: Samsung's Smart SON, Smart Scheduler and CognitiV Analytics – The "Computer". {Source: Attachment #3 (Pg. 1 & 2)} <http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/>



User-Centric Performance Analysis

Mobile networks have long focused on voice service Key Performance Indicators (KPIs) such as Mean Opinion Score (MOS) and others. In an era of data dominance, these KPIs are no longer sufficient to judge overall network performance. But with so many different kinds of data usage driven by thousands of different applications, each with its own unique set of network performance requirements, it can be intensely difficult for operators to adjust a network for maximum performance across all type of data usage. By analyzing key metrics for popular services such as video stalling and buffering time delay, network operators can pinpoint the root causes behind key customer pain points which are driving customer churn rates upwards. By analyzing user QoE on a per-service basis, and providing important Service Quality Management tools, Samsung's CognitiV Analytics helps operators stand apart from the competition in the eyes of subscribers.

Fig. 5: Samsung's CognitiV Analytics – UE referenced network performance (QoE) measurements.

{Source: Attachment #4 (Pg. 2 & 3)}

<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

The third product, CognitiV Analytics, is a real-time data processing tool that collects and analyzes data from various sources, including both network elements and user device data, to provide analytics on network, service and users.

Monetize data with Analytics

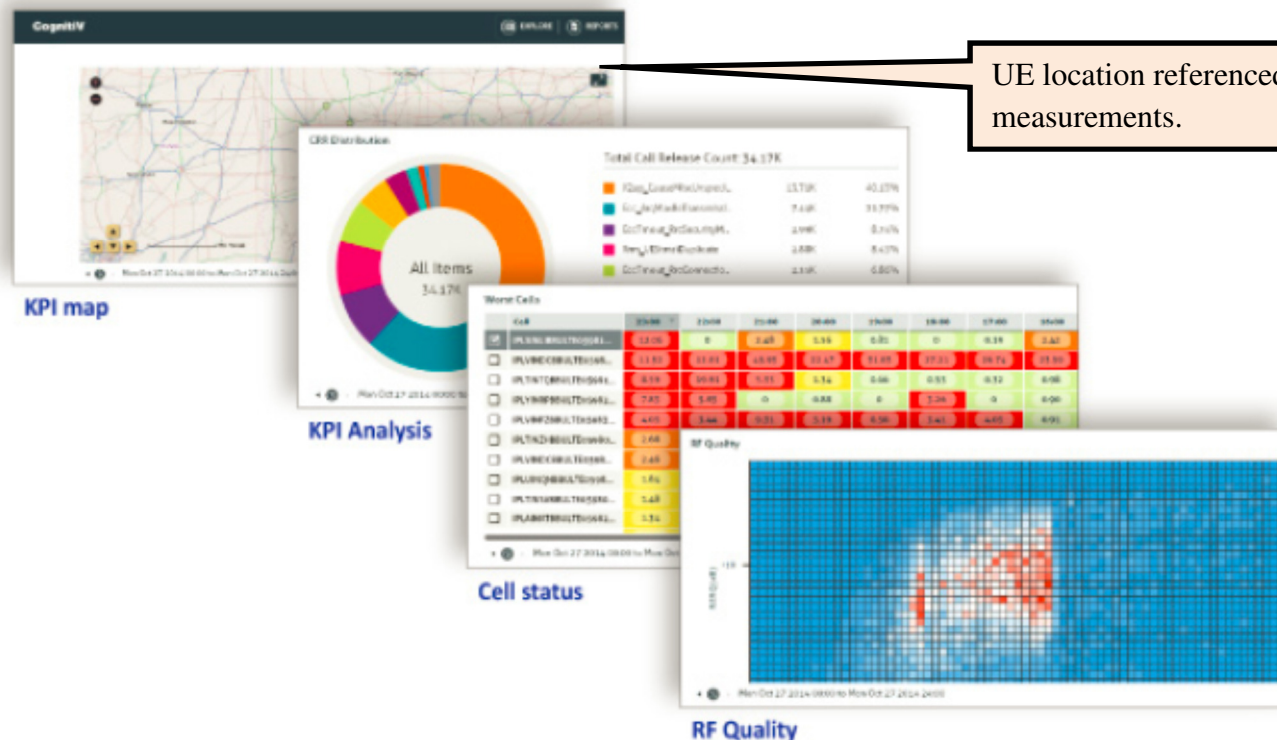
CognitiV Analytics provides detailed networks, services and users analytics useful to optimize network operations and utility. But beyond that, the large amount of data collected and analyzed carries extra value.

Such data can indeed enable new value added services. Location-based services, context-aware applications, differentiated QoE services, targeted advertising are all promising fields that raises a growing interest among operators, OTT players, application developers and advertisers.

The fact that data collected by CognitiV Analytics can be used to provide location-based services and targeted advertising, further confirms that CognitiV Analytics collects UE geographical location information.

Fig. 6: CognitiV Analytics – Collects UE location information. {Source: Attachment #3 (Pg. 2 & 4)}
<http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/>

S.No.	Element of Claim #1	Corresponding aspects in use by/marketed by M/S Samsung	
3.	<p>The said computer (exhibit C) further receives and stores performance data of connections between the one or more mobile wireless communications devices (exhibit B) and the radio-frequency transceiver (exhibit A) along with the indication of location.</p>	<p>Explanation of Manner of use by potential infringer</p>	<p>Samsung's CognitiV Analytics (exhibit C) collects network performance measurements (KPI measurements) in terms of QoS provided by the network to the subscribers (UEs) and also as QoE (Quality of Experience) experienced by the subscribers (UEs) (exhibit B) in the network. The KPI measurement pertaining to user-referenced QoE is invariably associated with the location of the UE associated with the said measurement. Also, it is mentioned that the information collected by CognitiV Analytics (exhibit C), including the UE (exhibit B) location information and network performance information, is monetized through providing the subscriber new value-added services (VAS), location-based, targeted services and differentiated QoE services etc. Therefore, it is obvious that the collected UE-referenced network performance measurement or QoE measurement and the corresponding UE location information are correlated by CognitiV Analytics and stored in a memory, analysed over time for trends or patterns, and used for providing value-added services (VAS).</p>
		<p>Evidence</p>	<p>1) Fig. 7 & 8; 2) Attachment #3 & #4.</p>



Samsung's CognitiV Analytics platform taps into elements throughout the network, as well as important radio performance information from user devices themselves in order to collect a vast amount of network-relevant data in real time. Built on a Hadoop-based Big Data platform, CognitiV Analytics has

instant access to an array of data on a per-user and per-service basis, giving its Apache Hadoop-based Big Data Analytics engine the ability to detect potential network and service issues and facilitate and appropriate response.

CognitiV Analytics places particular emphasis on individual users' Quality of Experience (QoE), and can direct network elements to prioritize users experiencing sub-standard network performance in order to ensure a minimum network-wide QoE is met.

User-Centric Performance Analysis

Mobile networks have long focused on voice service Key Performance Indicators (KPIs) such as Mean Opinion Score (MOS) and others. In an era of data dominance, these KPIs are no longer sufficient to judge overall network performance. But with so many different kinds of data usage driven by thousands of different applications, each with its own unique set of network performance requirements, it can be intensely difficult for operators to adjust a network for maximum performance across all type of data usage. By analyzing key metrics for popular services such as video stalling and buffering time delay, network operators can pinpoint the root causes behind key customer pain points which are driving customer churn rates upwards. By analyzing user QoE on a per-service basis, and providing important Service Quality Management tools, Samsung's CognitiV Analytics helps operators stand apart from the competition in the eyes of subscribers.

Supported by powerful network and service analysis functionality, operators can gain critical insight into the performance of various network operations in a convenient and intuitively displayed manner. Taking advantage of the analytics algorithms designed to consider the unique environment and characteristics of each operator's network, operators can make sense of, and leverage, the enormous amount of big data generated from network elements, user devices, and service usage, in order to determine the root cause of poor user experience events and generate an appropriate and effective response. CognitiV Analytics can generate as much as a 45% reduction in time needed to detect and resolve network problems and a 75% reduction in overall drive testing requirements which configuring network elements.

Fig. 7: Samsung's CognitiV Analytics – UE location referenced network performance (QoE) measurements.

{Source: Attachment #4 (Pg. 1 to 3)}

<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

The third product, CognitiV Analytics, is a real-time data processing tool that collects and analyzes data from various sources, including both network elements and user device data, to provide analytics on network, service and users.

Monetize data with Analytics

CognitiV Analytics provides detailed networks, services and users analytics useful to optimize network operations and utility. But beyond that, the large amount of data collected and analyzed carries extra value.

Such data can indeed enable new value added services. Location-based services, context-aware applications, differentiated QoE services, targeted advertising are all promising fields that raises a growing interest among operators, OTT players, application developers and advertisers.

The fact that data collected by CognitiV Analytics can be used to provide location-based services, targeted advertising, differentiated QoE services and context-aware services, further confirms that CognitiV Analytics collects data including UE-referenced QoE or network performance measurements, the corresponding UEs' geographical location information, and stores the collected information in a memory.

Fig. 8: CognitiV Analytics – Collects and stores UE location referenced QoE measurements.

{Source: Attachment #3 (Pg. 2 & 4)}

<http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/>

S.No.	Element of Claim #1	Corresponding aspects in use by/marketed by M/S Samsung	
4.	The said computer (exhibit C) references the performance data to expected performance data.	Explanation of Manner of use by potential infringer	<p>Samsung's CognitiV Analytics (exhibit C), which collects a vast amount of network performance, QoS and QoE measurement data, analyzes the collected data by comparing it against the required/expected/standard values.</p> <p>Based on this comparative analysis, the network elements can be directed to prioritize users experiencing sub-standard network performance in order to ensure that a minimum network-wide QoE is met.</p> <p>Based on the network condition data collected by CognitiV Analytics (exhibit C) and the comparative analysis, Smart SON (exhibit C) can optimize the network by taking into consideration network performance requirements.</p> <p>Alternatively, Smart SON (exhibit C) itself can automatically identify sub-par network performance.</p>
		Evidence	<p>1) Fig. 9 & 10; 2) Attachment #4 & #8.</p>

CognitiV Analytics places particular emphasis on individual users' Quality of Experience (QoE), and can direct network elements to prioritize users experiencing sub-standard network performance in order to ensure a minimum network-wide QoE is met.

CognitiV Analytics compares measured network performance or QoE data with standard/required/expected network performance values and minimum expected QoE thresholds, respectively.

Taking advantage of the analytics algorithms designed to consider the unique environment and characteristics of each operator's network, operators can make sense of, and leverage, the enormous amount of big data generated from network elements, user devices, and service usage, in order to determine the root cause of poor user experience events and generate an appropriate and effective response.

CognitiV Analytics enjoys significant synergy when interworking with Samsung's innovative Smart LTE technologies. Samsung's award-winning Smart SON (Self-Optimizing Network) solution can take advantage of network condition data gathered and generated by CognitiV Analytics in order to further adjust and fine-tune network parameters such as antenna tilt and transmission power. In doing so, Smart SON can amplify its own capabilities to optimize the network by additionally taking into consideration network performance requirements and usage patterns of individual services.

Fig. 9: Samsung's CognitiV Analytics – Compares measured and required QoS/QoE.
{Source: Attachment #4 (Pg. 2 to 4)}

<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

Smart SON uses the network condition data gathered by CognitiV Analytics to optimize the network by taking into consideration network performance requirements.

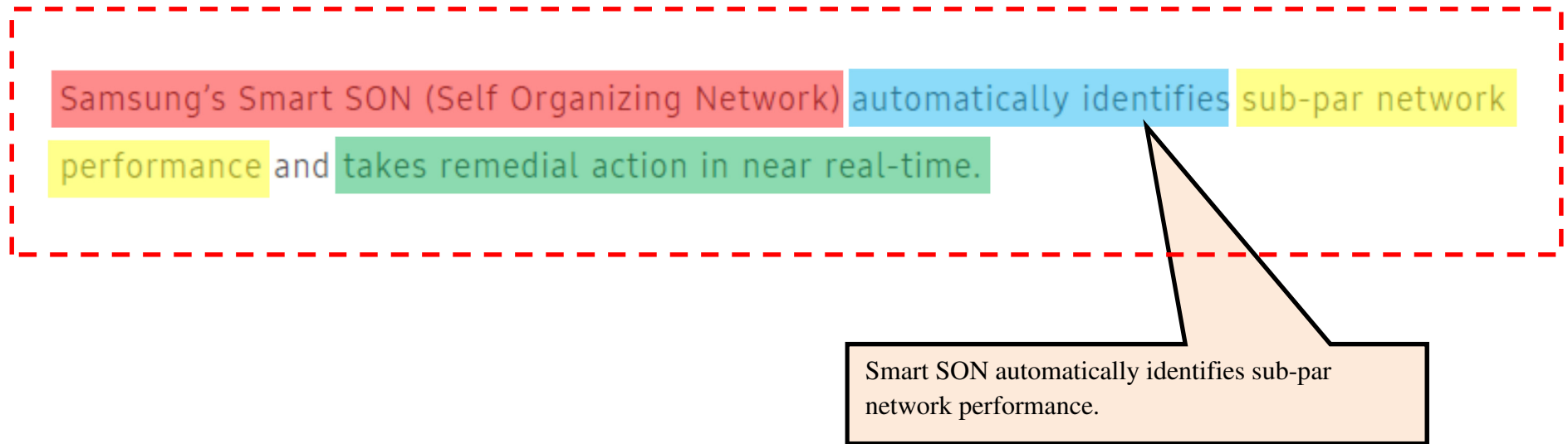


Fig. 10: Samsung's Smart SON – can automatically identify sub-par network performance. {Source: Attachment #8 (Pg. 2)}

S.No.	Element of Claim #1	Corresponding aspects in use by/marketed by M/S Samsung	
5.	<p>The said computer (exhibit C) determines at least one suggested corrective action in conformity with differences between the performance data and expected performance data in conjunction with the indication of location.</p>	<p>Explanation of Manner of use by potential infringer</p>	<p>Samsung's CognitiV Analytics (exhibit C), which collects a vast amount of network performance, QoS and QoE measurement data, analyzes the collected data by comparing it against the required/expected values. As mentioned under Claim element No. 3, the collected QoE measurements include UE (exhibit B) location referenced measurements. Based on this comparative analysis, the network elements can be directed to prioritize users experiencing sub-standard network performance in order to ensure that a minimum network-wide QoE is met. Based on CognitiV Analytics' (exhibit C) network condition data collection and comparative analysis, Smart SON (exhibit C) can optimize the network by taking into consideration UE (exhibit B) location referenced network performance requirements. Smart SON (exhibit C) can adjust and fine tune network parameters like Antenna(exhibit A) tilt and Transmission power. Smart SON (exhibit C) includes not only standard SON self-configuration, optimization and healing functions such as ANR, capacity and coverage optimization and cell outage compensation but also unique features such as drive test optimization, Transmit power control and Antenna(exhibit A) tilt optimization. Smart SON can automatically identify sub-par network performance and take remedial action in near real-time.</p>
		<p>Evidence</p>	<p>1) Fig. 11 to 15; 2) Attachment #1, #3, #4 & #8.</p>

CognitiV Analytics places particular emphasis on individual users' Quality of Experience (QoE), and can direct network elements to prioritize users experiencing **sub-standard network performance** in order to ensure a minimum network-wide QoE is met.

CognitiV Analytics compares measured network performance or QoE data with standard/required/expected network performance values and minimum expected QoE thresholds, respectively, and directs network elements to take appropriate corrective action to ensure a minimum network-wide QoE threshold is met.

CognitiV Analytics enjoys significant synergy when interworking with Samsung's innovative Smart LTE technologies. Samsung's award-winning Smart SON (Self-Optimizing Network) solution can take advantage of network condition data gathered and generated by CognitiV Analytics in order to further adjust and fine-tune network parameters such as antenna tilt and transmission power. In doing so, Smart SON can amplify its own capabilities to optimize the network by additionally taking into consideration network performance requirements and usage patterns of individual services.

Smart SON can optimize the network by adjusting and fine-tuning network parameters such as antenna tilt and transmission power based on CognitiV Analytics' comparison of measured network performance data against the network performance required.

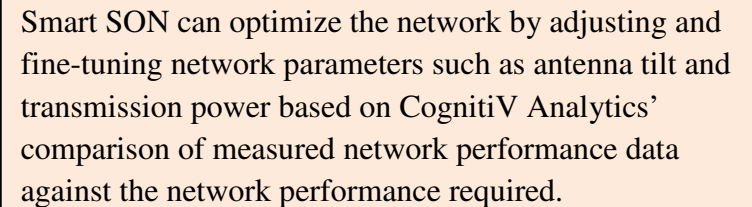
Fig. 11: Samsung's Smart SON optimizes the client network performance by comparing the network condition data gathered by CognitiV Analytics against the required network performance or QoS/QoE. {Source: Attachment #4 (Pg. 2 & 4)}
<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

Samsung Smart SON includes standard SON self-configuration/optimization/healing functions such as Automatic Neighbor Relation, capacity coverage optimization and cell outage compensation but also unique features such as Drive test optimization, Transmit Power Control and Antenna tilt optimization.

Samsung Operations and Analytics tools are designed to monitor, manage, optimize and troubleshoot the network in real or near real-time.

The 3 products offer their own benefits but optimum performance and maximum value is obtained by combining them. For example, Smart SON can use real-time RF information from the Smart Scheduler and network and service analysis from CognitiV Analytics to command eNodeB's transmit power or antenna tilting angle instantly.

By combining Samsung Smart SON and Smart Scheduler with CognitiV Analytics, operators can manage load and resources allocation, reduce inefficiencies and ultimately optimize their QoS and QoE.



Smart SON can optimize the network by adjusting and fine-tuning network parameters such as antenna tilt and transmission power based on CognitiV Analytics' comparison of measured network performance data against the network performance required.

Fig. 12: Smart SON – Optimizes network based on analysis performed by CognitiV Analytics. {Source: Attachment #3 (Pg. 1 & 2)} <http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/>

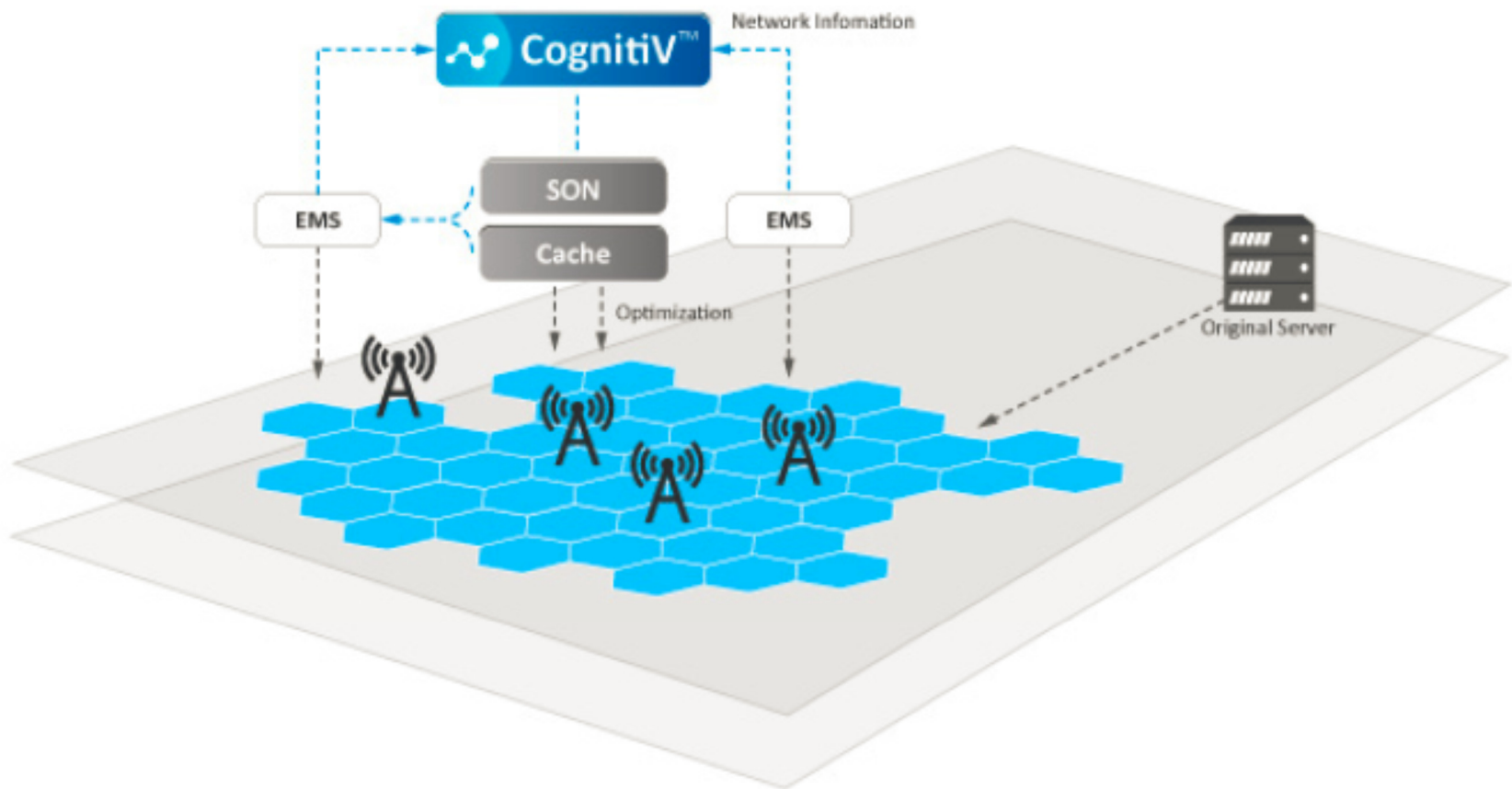


Fig. 13: Smart SON – Optimizes network by taking corrective actions in response to the network performance data collected and analyzed by CognitiV Analytics. {Source: Attachment #4 (Pg. 3)}

<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

Automated Network Operation

Air 구간 포함 수집된 정보를 종합적으로 분석하여 자동 망 운용 지원

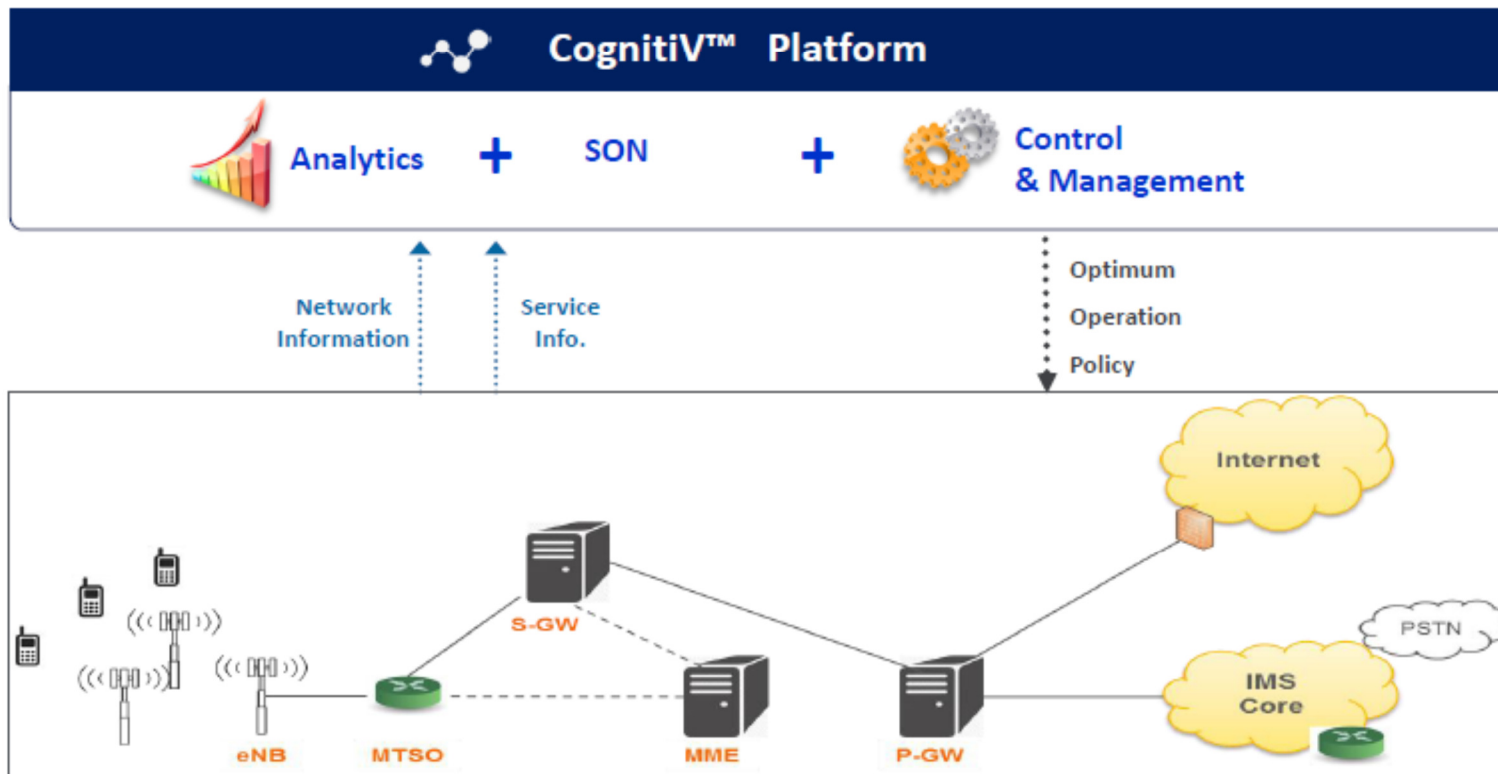


Fig. 14: Samsung's SON solution – Optimizes network by taking corrective actions in response to the network performance data collected and analyzed by CognitoV Analytics. {Source: Attachment #1 (Pg. 10)}

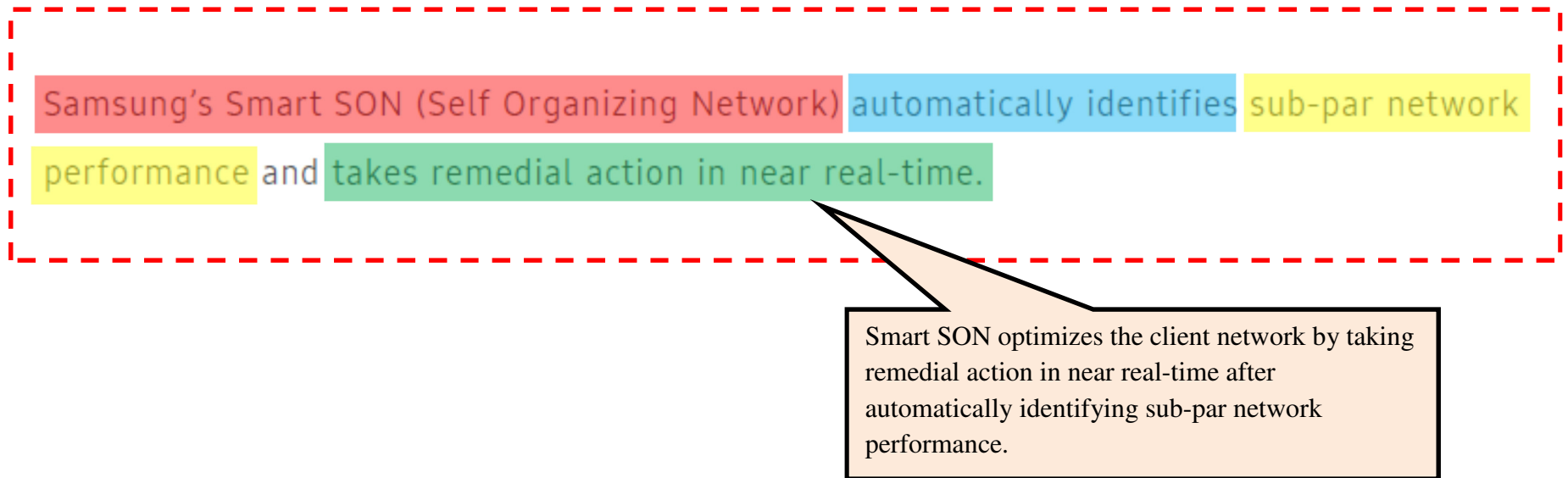


Fig. 15: Samsung's Smart SON – Optimizes network by taking corrective actions in real-time after automatically identifying sub-par network performance. {Source: Attachment #8 (Pg. 2)}

S.No.	Element of Claim #1	Corresponding aspects in use by/marketed by M/S Samsung	
6.	<p>The said computer (exhibit C) further receives an error code from the radio-frequency transceiver (exhibit A), determines whether the error code indicates a performance issue with respect to the connection between the one or more mobile wireless communications devices (exhibit B) and the radio-frequency transceiver (exhibit A).</p>	<p>Explanation of Manner of use by potential infringer</p>	<p>The CognitiV Analytics (exhibit C) platform continuously receives or collects network performance measurements pertaining to the quality of RF-based interactions between the UEs (exhibit B) and the network elements (RF transceivers or base stations like eNodeBs, small cells, micro cells, macro cells and femto cells) (exhibit A). The network elements continuously monitor the performance or quality of their RF-based interactions with the UEs (exhibit B) they are servicing and generate measurements (including alarms, when the measurements are below a set quality threshold), and communicate the said measurements or alarms northwards up the network management architecture through the EMS (Element Management System) and/or the NMS (Network Management System) to the CognitiV Analytics (exhibit C) platform.</p> <p>The CognitiV Analytics (exhibit C) platform analyses the received alarms by comparing the observed measurements relevant to each received alarm against the standard/expected values or thresholds, and ascertains the underlying root cause for the degradation in the quality of RF-based interactions between the UEs (exhibit B) and the network elements, which lead to the generation of the said alarm.</p>
		<p>Evidence</p>	<p>1) Fig. 16 to 21; 2) Attachment #1 & #4.</p>

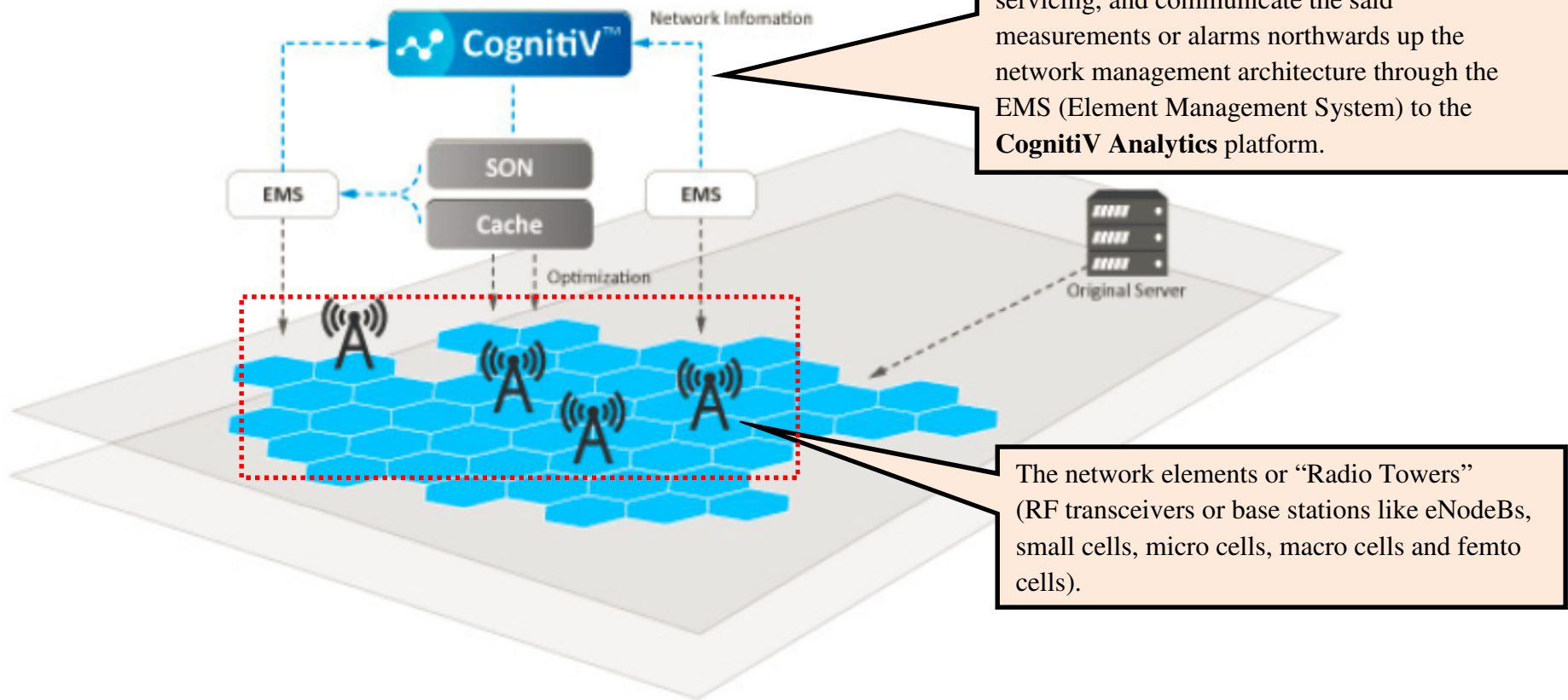


Fig. 16: The network elements continuously monitor and generate network performance measurements (including alarms, when the measurements are below a set quality threshold) pertaining to their RF-based interactions with the UEs they are servicing, and communicate the said measurements or alarms northwards up the network management architecture through the EMS (Element Management System). {Source: Attachment #4 (Pg. 3)}

<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

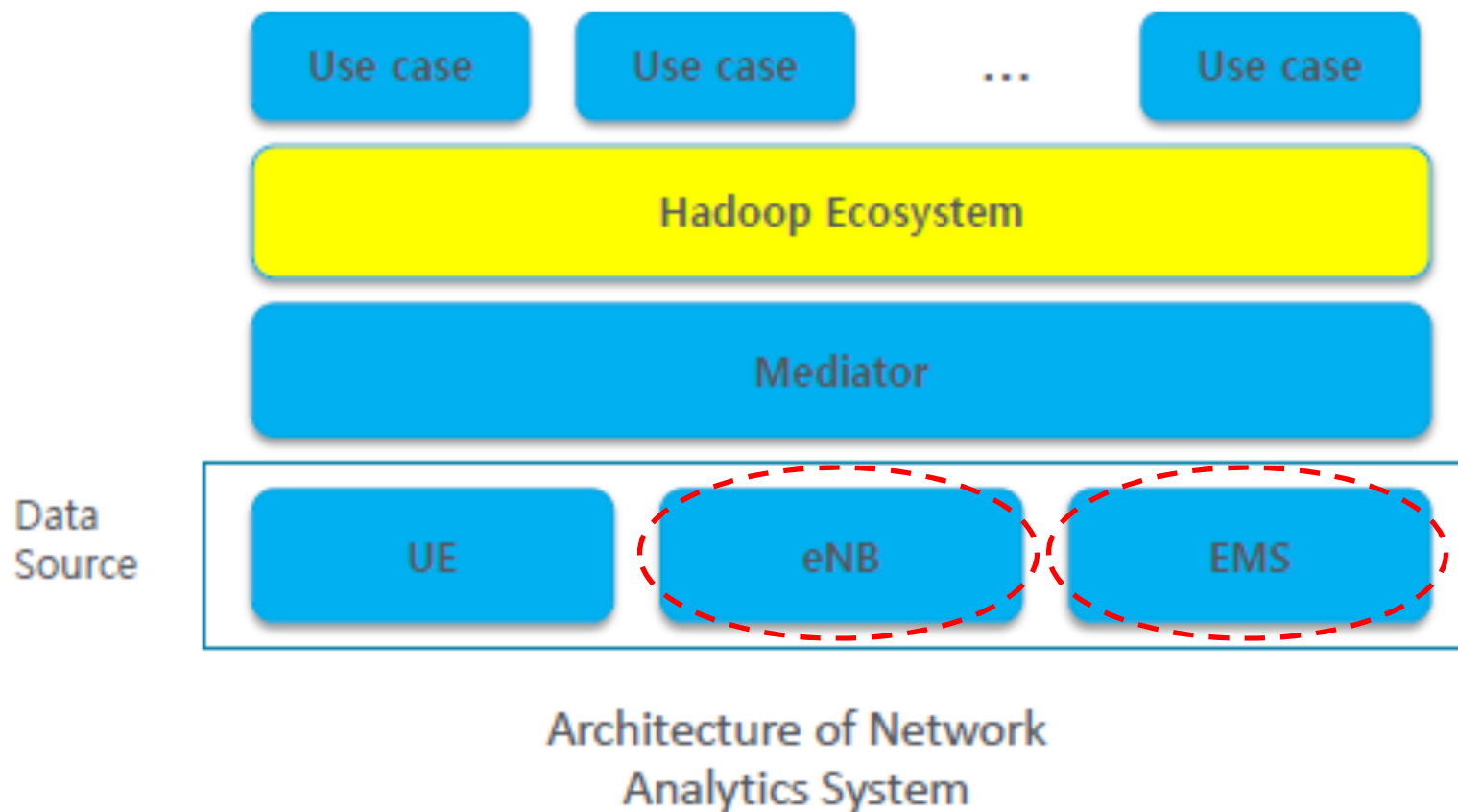


Fig. 17: The network elements continuously monitor and generate network performance measurements (including alarms, when the measurements are below a set quality threshold) pertaining to their RF-based interactions with the UEs they are servicing, and communicate the said measurements or alarms northwards up the network management architecture.
{Source: Attachment #1 (Pg. 8)}

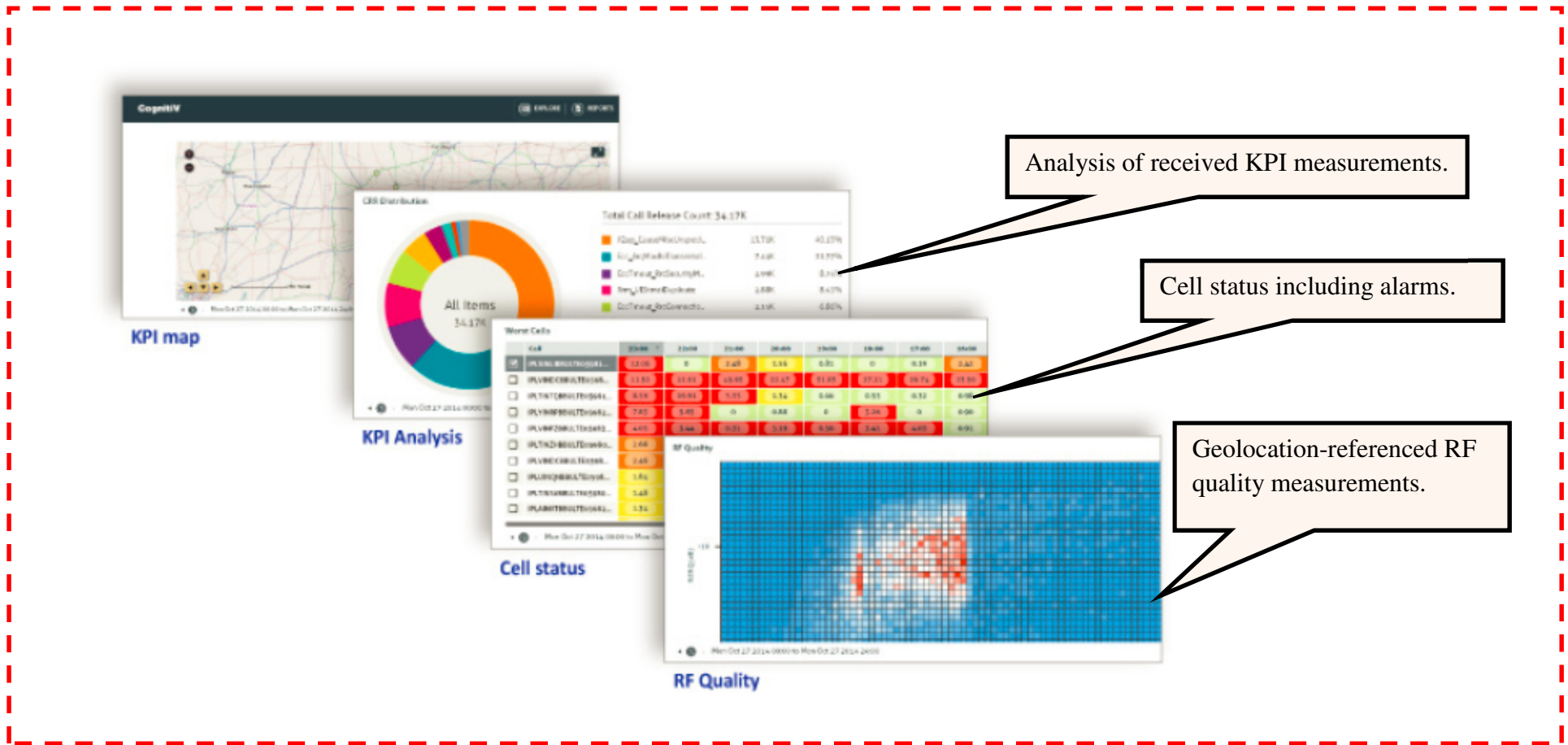


Fig. 18: The network performance measurements (KPIs), including those obtained from the network elements.

{Source: Attachment #4 (Pg. 3)}

<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

Samsung's CognitiV Analytics platform taps into elements throughout the network, as well as important radio performance information from user devices themselves in order to collect a vast amount of network-relevant data in real time. Built on a Hadoop-based Big Data platform, CognitiV Analytics has instant access to an array of data on a per-user and per-service basis, giving its Apache Hadoop-based Big Data Analytics engine the ability to detect potential network and service issues and facilitate and appropriate response.

CognitiV Analytics collects network performance measurements (KPI metrics) and receives alarms from network elements, analyses the received data, and detects potential network and service issues.

By analyzing key metrics for popular services such as video stalling and buffering time delay, network operators can pinpoint the root causes behind key customer pain points which are driving customer churn rates upwards. By analyzing user QoE on a per-service basis, and providing important Service Quality Management tools, Samsung's CognitiV Analytics helps operators stand apart from the competition in the eyes of subscribers.

Fig. 19: CognitiV Analytics collects network data and alarms, analyzes the data, and detects the root causes of the alarms.

{Source: Attachment #4 (Pg. 1 & 2)}

<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

Efficiency Improvements in Network Operations

Supported by powerful network and service analysis functionality, operators can gain critical insight into the performance of various network operations in a convenient and intuitively displayed manner. Taking advantage of the analytics algorithms designed to consider the unique environment and characteristics of each operator's network, operators can make sense of, and leverage, the enormous amount of big data generated from network elements, user devices, and service usage, in order to determine the root cause of poor user experience events and generate an appropriate and effective response. CognitiV Analytics can generate as much as a 45% reduction in time needed to detect and resolve network problems and a 75% reduction in overall drive testing requirements which configuring network elements.

CognitiV Analytics determines the root cause of “Poor user experience events” or alarms, by analysing data generated from the network elements.

Fig. 20: CognitiV Analytics collects network data and alarms, analyzes the data, and detects the root causes of the alarms.

{Source: Attachment #4 (Pg. 3)}

<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

3GPP SON Specification

Function		Contents	Spec.	Related specification
Self- Establishment (Self-Configuration)		Automation for eNB installation and initial radio parameter configuration (Initial PCI, Initial Neighbor configuration, Initial PRACH info.)	Rel-8	32.501, 32.502, 32.531, 32.532, 32.533, 32.537, 36.300
Self-Optimization	Automatic PCI Configuration	PCI is automatically allocated and re-allocation for PCI conflict.	Rel-8	36.902, 36.300, 36.423
	Automatic Neighbor Relation	Detect Neighbor Cell automatically and Neighbor Cell List configuration(optimization)	Rel-8	32.511, 32.761, 32.762, 32.763, 32.765, 36.300, 36.331, 36.413, 36.423
	Mobility Robustness Optimization	Detect the problem of Handover automatically and HO parameter configuration	Rel-9	32.816, 32.521, 32.522, 32.523, 36.902, 36.300, 36.314, 36.423
	Mobility Load Balancing Opt.	cell reselection /HO parameter optimization for cell traffic load balancing	Rel-9	32.816, 32.521, 32.522, 32.523, 36.902, 36.300, 36.314, 36.423
	RACH Optimization	RACH parameter optimization and minimize interference for Access delay and RACH	Rel-9	32.521, 32.522, 32.523, 36.902, 36.300, 36.423
	Inter Cell Interference Coordination	Improvement for edge performance with minimized neighbor-cell interference	Rel-8	36.213, 36.214, 36.423, 32.521, 32.522, 32.523
	Coverage & Capacity Opt.	Analyzing the problem of Coverage and Capacity, Cell Coverage and Capacity optimization	Rel-10 expected	32.816, 32.521, 32.522, 32.523, 36.902, 36.300, 36.423
Self-Healing	Alarm monitoring	Real-time monitoring of alarms. Collection & Analysis for correlated information Triggering of self-healing	Rel-10	32.541, 32.542, 32.543, 32.823 COD: cell outage detection COR: cell outage recovery COC: cell outage compensation
	Self-recovery of NE S/W	Recover NW S/W to initial states and recent backup states.		
	Self-healing of board fault	Detect Board fault and decrease and delete automatically the user impact.		
	Self-healing of cell outage	When it happen Cell outage, it stats automatic compensation for network problem (COD, COR, COC)		
Minimization of Drive-Tests		Define the kind of UE measurement, collection method, transmission structure for replacing drive-test.	Rel-10	TR 36.805 TS 37.320
Energy Saving Management		Down energy cost for providing cell capacity as traffic requests,	Rel-10	TR 32.826 (new), TR 36.902 TS 32.551

Fig. 21: 3GPP SON specification: Real-time Alarm monitoring is an important SON function.

<https://www.slideshare.net/gprsiva/chap-special-addition-son>

S.No.	Element of Claim #1	Corresponding aspects in use by/marketed by M/S Samsung	
7.	The said computer (exhibit C) determines the at least one suggested corrective action in response to the error code.	Explanation of Manner of use by potential infringer	<p>Based on CognitiV Analytics (exhibit C) data collection and comparative analysis, Smart SON can optimize the network by taking into consideration UE (exhibit B) location referenced network performance requirements.</p> <p>When an “alarm” is received from a network element (BTS or eNodeB), analyzed and root cause identified, Smart SON (exhibit C) can adjust and fine tune network element parameters like Antenna (exhibit A) tilt and Transmission power for the said network element, to increase the coverage of the said network element to remedy a coverage hole (responsible for call drops), or to improve the strength or quality of the DL signal transmitted by the said network element, or to reduce the interference caused to UEs (exhibit B) on a neighboring cell.</p> <p>Smart SON (exhibit A) includes not only standard SON self-configuration, optimization and healing functions such as ANR, capacity and coverage optimization and cell outage compensation but also unique features such as drive test optimization, Transmit power control and Antenna (exhibit A) tilt optimization.</p> <p>When an overloaded cell (base station) is identified, Smart SON (exhibit C) would incorporate ‘network initiated handovers’ to balance the cell loads in real-time using Smart Scheduler (exhibit C). It would be used to automatically switch an LTE user located in edge area from a heavily loaded cell to a less loaded cell. This would ensure better QoS to edge users in the network and more efficient utilisation of radio resources.</p>
		Evidence	1) Fig. 22 to 28; 2) Attachment #1, #3 & #4.

CognitiV Analytics places particular emphasis on individual users' Quality of Experience (QoE), and can direct network elements to prioritize users experiencing sub-standard network performance in order to ensure a minimum network-wide QoE is met.

CognitiV Analytics compares measured network performance or QoE data with standard/required/expected network performance values and minimum expected QoE thresholds, respectively, and directs network elements to take appropriate corrective action to ensure a minimum network-wide QoE threshold is met.

CognitiV Analytics enjoys significant synergy when interworking with Samsung's innovative Smart LTE technologies. Samsung's award-winning Smart SON (Self-Optimizing Network) solution can take advantage of network condition data gathered and generated by CognitiV Analytics in order to further adjust and fine-tune network parameters such as antenna tilt and transmission power. In doing so, Smart SON can amplify its own capabilities to optimize the network by additionally taking into consideration network performance requirements and usage patterns of individual services.

Smart SON can optimize the network by adjusting and fine-tuning network parameters such as antenna tilt and transmission power based on CognitiV Analytics' comparison of measured network performance data against the network performance required.

Fig. 22: Samsung's CognitiV Analytics and Smart SON in Network Optimization.

{Source: Attachment #4 (Pg. 2 & 4)}

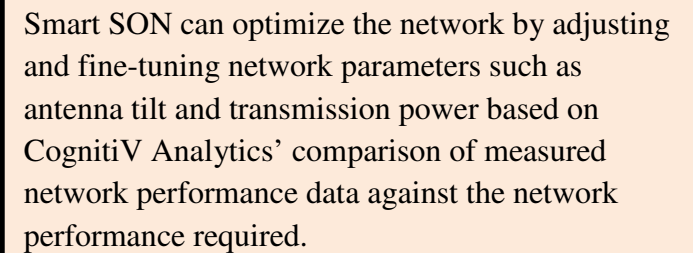
<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

Samsung Smart SON includes standard SON self-configuration/optimization/healing functions such as Automatic Neighbor Relation, capacity coverage optimization and cell outage compensation but also unique features such as Drive test optimization, Transmit Power Control and Antenna tilt optimization.

Samsung Operations and Analytics tools are designed to monitor, manage, optimize and troubleshoot the network in real or near real-time.

The 3 products offer their own benefits but optimum performance and maximum value is obtained by combining them. For example, Smart SON can use real-time RF information from the Smart Scheduler and network and service analysis from CognitiV Analytics to command eNodeB's transmit power or antenna tilting angle instantly.

By combining Samsung Smart SON and Smart Scheduler with CognitiV Analytics, operators can manage load and resources allocation, reduce inefficiencies and ultimately optimize their QoS and QoE.



Smart SON can optimize the network by adjusting and fine-tuning network parameters such as antenna tilt and transmission power based on CognitiV Analytics' comparison of measured network performance data against the network performance required.

Fig. 23: Smart SON – Network Optimization and troubleshooting. {Source: Attachment #3 (Pg. 1 & 2)}

<http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/>

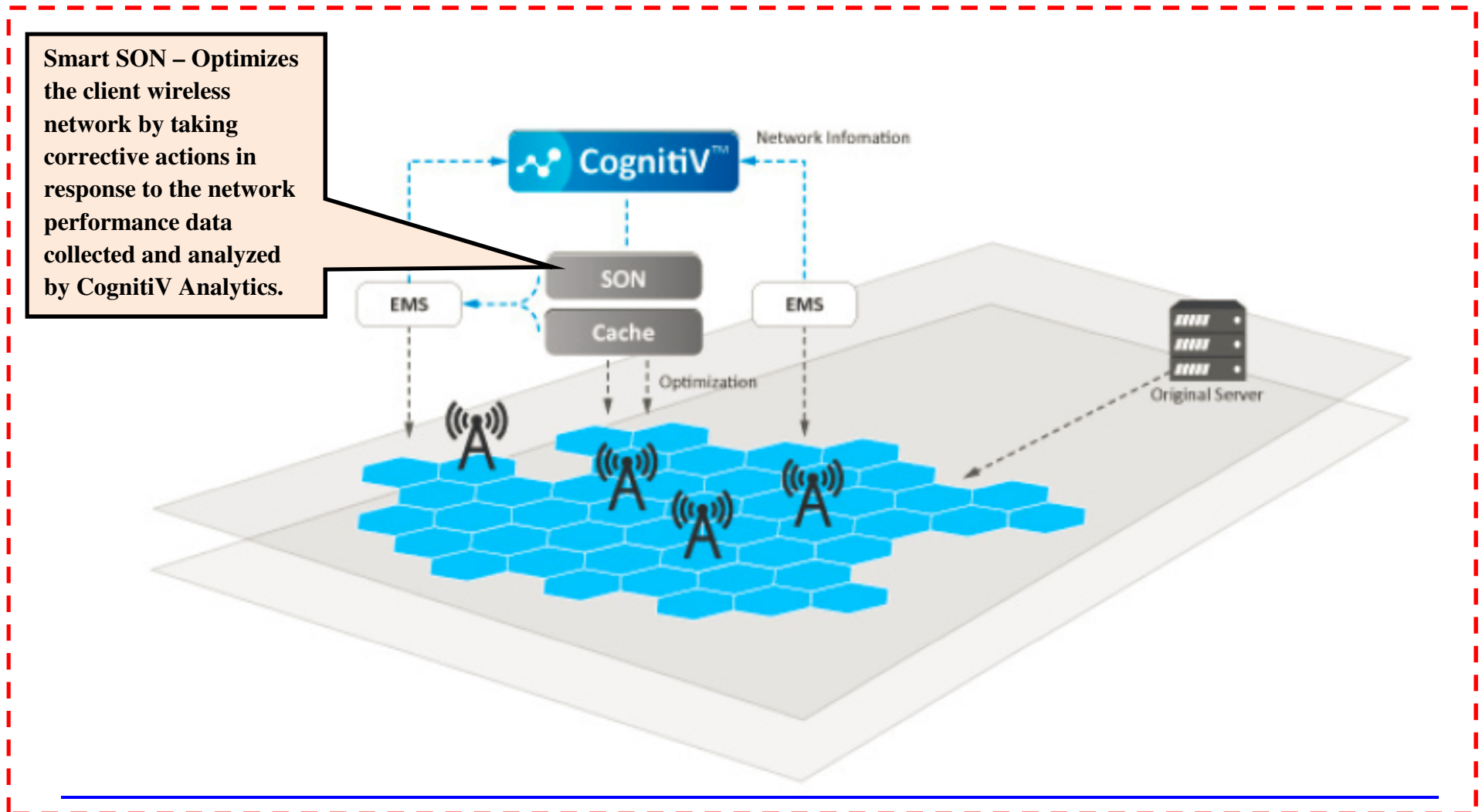


Fig. 24: Smart SON – Optimizes network by taking corrective actions in response to the network performance data collected and analyzed by CognitiV Analytics. {Source: Attachment #4 (Pg. 3)}

<http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/cognitiv-analytics>

Automated Network Operation

Air 구간 포함 수집된 정보를 종합적으로 분석하여 자동 망 운용 지원

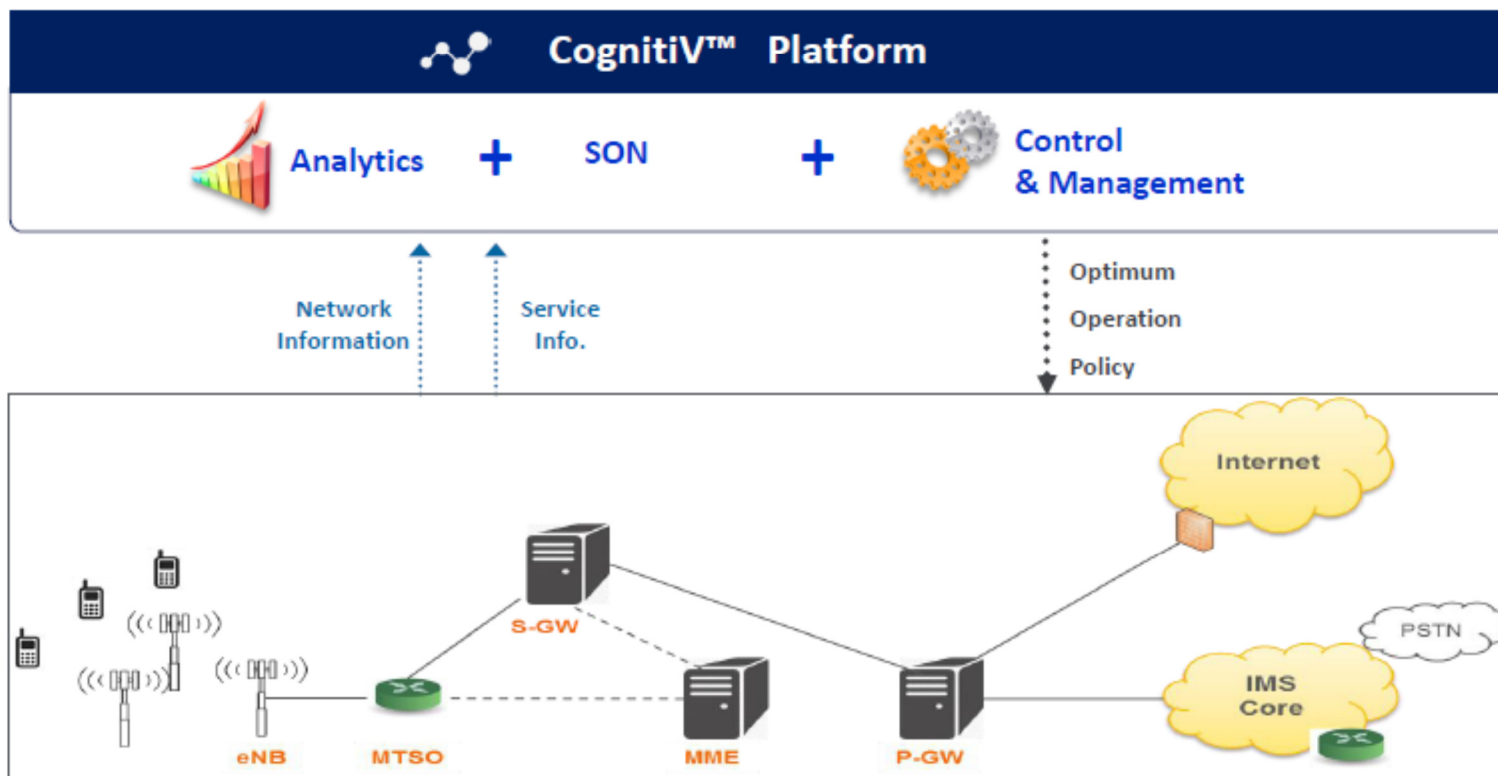


Fig. 25: Samsung's SON solution – Optimizes network by taking corrective actions in response to the network performance data collected and analyzed by CognitoV Analytics. {Source: Attachment #1 (Pg. 10)}

“Smart SON would also incorporate ‘network initiated handovers’ to balance the cell loads in real-time using Smart Scheduler. It would be used to automatically switch an LTE user located in edge area from a heavily loaded cell to a less loaded cell. This would ensure better QoS to edge users in the network and more efficient utilisation of radio resources.”

Fig. 26: Samsung Smart SON – Balances the cell loads, through ‘network initiated handovers’ with the help of Smart Scheduler, in real-time by automatically switching an LTE user located in the edge area from a heavily loaded cell to a less loaded cell.

{Source: <http://telecoms.com/interview/sales-and-marketing-director-samsung-networks-europewith-data-centric-networks-increasingly-in-demand-high-qos-for-every-user-is-imperative/>}

Our Smart Scheduler controls all cells as virtually one cell, or in other words centralizes radio resources management, in order to improve the allocation pattern, mitigate interference and maximize throughput.

Fig. 27: Smart Scheduler – Controls all cells as virtually one cell, and carries out the load balancing corrective action suggested or initiated by Smart SON. {Source: Attachment #3 (Pg. 2)}
<http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/>

3GPP SON Specification

Function		Contents	Spec.	Related specification
Self- Establishment (Self-Configuration)		Automation for eNB installation and initial radio parameter configuration (Initial PCI, Initial Neighbor configuration, Initial PRACH info.)	Rel-8	32.501, 32.502, 32.531, 32.532, 32.533, 32.537, 36.300
Self-Optimization	Automatic PCI Configuration	PCI is automatically allocated and re-allocation for PCI conflict.	Rel-8	36.902, 36.300, 36.423
	Automatic Neighbor Relation	Detect Neighbor Cell automatically and Neighbor Cell List configuration(optimization)	Rel-8	32.511, 32.761, 32.762, 32.763, 32.765 36.300, 36.331, 36.413, 36.423
	Mobility Robustness Optimization	Detect the problem of Handover automatically and HO parameter configuration	Rel-9	32.816, 32.521, 32.522, 32.523, 36.902, 36.300, 36.314, 36.423
	Mobility Load Balancing Opt.	cell reselection /HO parameter optimization for cell traffic load balancing	Rel-9	32.816, 32.521, 32.522, 32.523 36.902, 36.300, 36.314, 36.423
	RACH Optimization	RACH parameter optimization and minimize interference for Access delay and RACH	Rel-9	32.521, 32.522, 32.523, 36.902, 36.300, 36.423
	Inter Cell Interference Coordination	Improvement for edge performance with minimized neighbor-cell interference	Rel-8	36.213, 36.214, 36.423 32.521, 32.522, 32.523
	Coverage & Capacity Opt.	Analyzing the problem of Coverage and Capacity, Cell Coverage and Capacity optimization	Rel-10 expected	32.816, 32.521, 32.522, 32.523, 36.902, 36.300, 36.423
Self-Healing	Alarm monitoring	Real-time monitoring of alarms. Collection & Analysis for correlated information Triggering of self-healing	Rel-10	32.541, 32.542, 32.543, 32.823 COD: cell outage detection COR: cell outage recovery COC: cell outage compensation
	Self-recovery of NE S/W	Recover NW S/W to initial states and recent backup states.		
	Self-healing of board fault	Detect Board fault and decrease and delete automatically the user impact.		
	Self-healing of cell outage	When it happen Cell outage, it stats automatic compensation for network problem (COD, COR, COC)		
Minimization of Drive-Tests		Define the kind of UE measurement, collection method, transmission structure for replacing drive-test.	Rel-10	TR 36.805 TS 37.320
Energy Saving Management		Down energy cost for providing cell capacity as traffic requests,	Rel-10	TR 32.826 (new), TR 36.902 TS 32.551

Fig. 28: 3GPP SON specification: Self-Optimization and Self-Healing – Correcting network errors.

<https://www.slideshare.net/gprsiva/chap-special-addition-son>

3. Use of Samsung's SON solutions in USA:

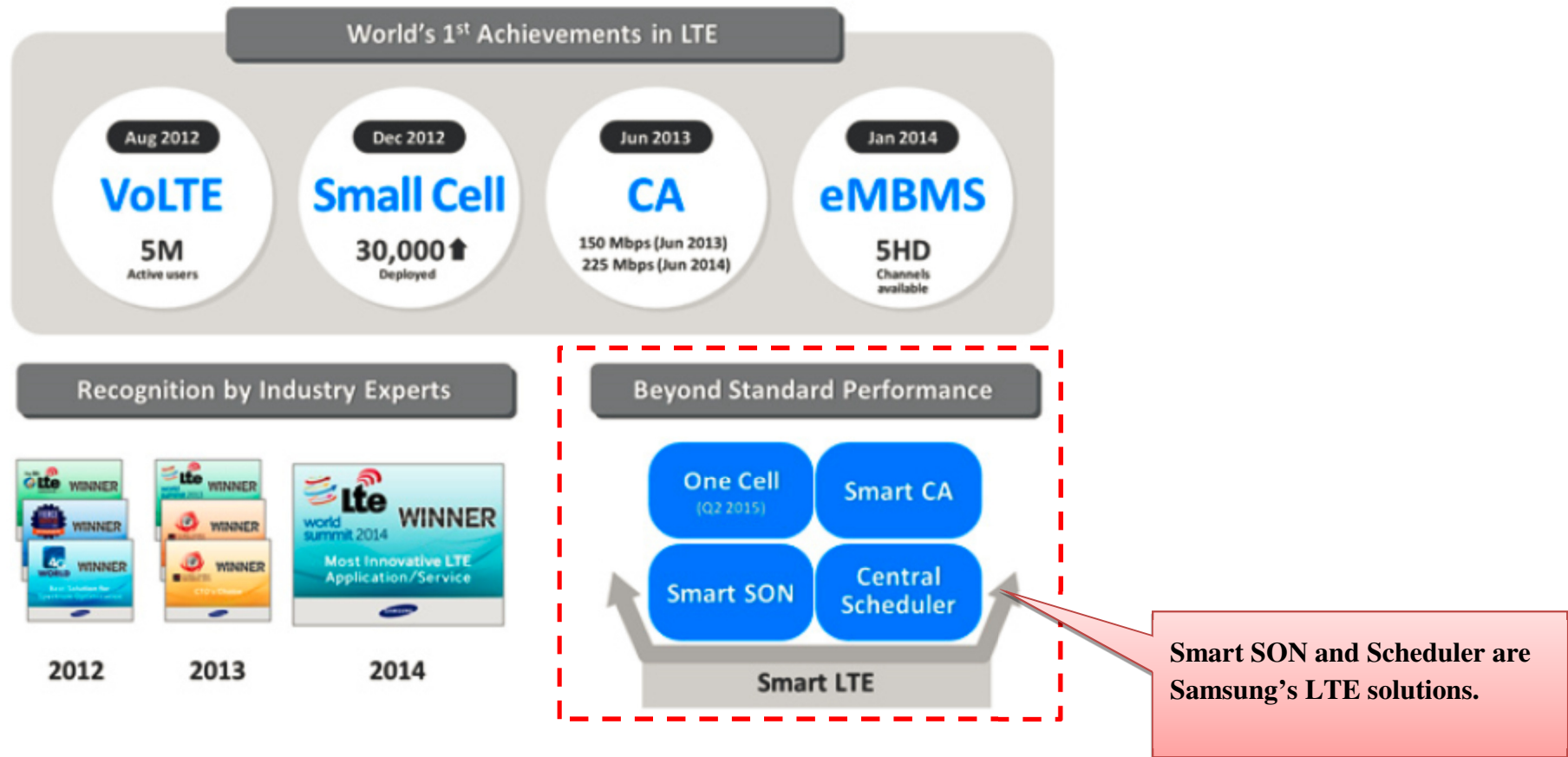
Samsung's LTE solutions:

Samsung's LTE Solutions build on more than 35 years of experience in developing and commercializing some of the world's most popular communication services. This wide range of field-experience in OFDMA technology has enabled Samsung to successfully partner with dozens of mobile service providers in diverse markets around the world - from the US to Japan to the Middle East and Europe - helping each of them to implement the most advanced solutions LTE has to offer.

Samsung sells LTE solutions to the mobile service providers in the USA.

{Source: <http://www.samsung.com/global/business/networks/our-business/networks-business-overview.html>}

Smart LTE:



{Source: <http://www.samsung.com/global/business/networks/our-business/networks-business-overview.html>}

High Density Cell Solutions:

- At Mobile World Congress 2014, Samsung Electronics will exhibit and demonstrate its 'High Density Cell Solutions' which will incorporate Samsung's 'Smart Networks' technology.
- Samsung will exhibit its 'Smart SON' and 'Smart CA' solutions, drawing on its Smart Networks technology.
- Samsung will also present its 'C-RAN' configuration for optimized network deployment.

Samsung shows Specialty in High Density Cell Solutions at Mobile World Congress 2014

Samsung's longstanding expertise in Dense Urban Area deployments will help mobile operators to address surging Mobile Data traffic

Samsung Electronics will exhibit and demonstrate its 'High Density Cell Solutions' at Mobile World Congress 2014. In addition, the solutions will incorporate Samsung's 'Smart Networks' technology, which addresses the chronic underperformance between network cells.

Samsung's **High Density Cell Solutions** incorporate Samsung's 'Smart Networks' technology, which includes **Smart SON**, **Smart CA** and **Smart Scheduler**.

{Source: <https://news.samsung.com/global/samsung-shows-specialty-in-high-density-cell-solutions-at-mobile-world-congress-2014>} <http://techmymoney.com/2014/02/21/samsung-showcases-innovative-solutions-revolutionize-mobile-networks/>

“Samsung has focused on developing and offering the most efficient network solutions for surging mobile data traffic,” said Sam Baker, Vice President and Head of Marketing Group at Networks Business, Samsung Electronics. “As a result, Samsung has successfully provided its advanced LTE networks to the dense urban areas in the U.S., Japan and Korea, whose markets also have the highest requirements of mobile data usage. We are confident that these solutions will equip operators to meet the rapidly increasing demands placed on their networks. Samsung will continue to innovate in this area, reinforcing its position as a network specialist for high density cell solutions.”

Samsung claims that it has provided advanced LTE networks to mobile operators in U.S.A. Samsung has also expressed confidence that its **High Density Cell Solutions**, which include Samsung’s SON solutions, namely **Smart SON** and **Smart Scheduler**, will equip their client mobile operators to meet the rapidly increasing demands placed on their networks. Samsung also claims to be a network specialist for high density cell solutions.

{Source: <https://news.samsung.com/global/samsung-shows-specialty-in-high-density-cell-solutions-at-mobile-world-congress-2014>} <http://techmymoney.com/2014/02/21/samsung-showcases-innovative-solutions-revolutionize-mobile-networks/>

LTE-Advanced network solution:

CHICAGO – August 29, 2016 – Today at Soldier Field in Chicago, [Sprint](#) (NYSE: S) and [Samsung Electronics America, Inc.](#) provided a look at what's next for the Sprint LTE Plus Network with the first live U.S. demonstration of three-channel carrier aggregation on Sprint's network. The demonstration reached peak download speeds of more than 230 Mbps running on Samsung's latest network infrastructure technology and hottest new devices including the [Samsung Galaxy Note7](#), [Galaxy S7](#), and [Galaxy S7 edge](#).

Carrier aggregation is an LTE-Advanced feature that bonds together bands of spectrum to create wider channels, produce greater capacity and deliver faster speeds on capable devices. Essentially it creates a wider lane that allows more data traffic to travel at higher rates. Today, Sprint has deployed three-channel carrier aggregation on more than 500 cell sites in Chicago. Today's three-channel carrier demonstration at Soldier Field utilized Sprint's 2.5 GHz spectrum to deliver peak download speeds of more than 230 Mbps. It also showcased live streaming of ultra-high definition 4K video and the blazing fast, high-bandwidth capability of Sprint's LTE Plus Network. Participants were also able to experience a low-latency, high-speed, virtual reality system.

"Ten months ago Chicago was our first LTE Plus market receiving two-channel carrier aggregation and we're excited to take a leadership role as the first carrier in the U.S. to publicly demonstrate three-channel carrier aggregation live in the field," said **Günther Ottendorfer, Sprint COO, Technology**. "4K video and immersive virtual reality systems are gaining momentum and Sprint is ready with more spectrum and capacity than any other carrier to support our customers' demands for data now and well into the future."

Behind the scenes, today's demonstration utilized Samsung's three-channel carrier aggregation technology delivered via software upgrade on Sprint's current LTE Plus network. In optimal RF conditions, three-channel carrier aggregation can increase throughput by 50 percent over the current two-channel carrier network^[1], providing higher speeds and an enhanced user experience. For instance, users can reduce download time of a 1GB video by approximately one-third in a typical environment, when compared to using two-channel carrier aggregation. At today's demonstration, Samsung successfully showcased the LTE-Advanced network solution, as well as its devices supporting three-channel carrier aggregation including the Samsung Galaxy S7, Galaxy S7 edge and recently launched Galaxy Note7.

"Samsung is excited to bring Chicago on air with this new three-channel aggregation capability in Sprint's network, and to facilitate today's demonstration," said **Mark Louison, SVP and General Manager of Samsung Networks**. "We continue to invest in LTE Advanced technologies and drive commercialization of new three-channel aggregation features with carriers such as Sprint through both our Network infrastructure and device products. This will ensure customers will receive the best possible wireless service experience."

Samsung has provided its **LTE-Advanced** network solution to **Sprint** in U.S.A.

<https://news.samsung.com/us/sprint-samsung-sprint-lte-plus-network-live-u-s-demonstration-of-three-channel-carrier-aggregation-samsung-galaxy-note7/>

LTE-Advanced is a term used for the version of LTE that addresses IMT- Advanced requirements, as specified in 3GPP Release 10 and beyond. The world's first LTE-Advanced network using Carrier Aggregation was commercially launched in South Korea by SK Telecom (which included a compatible handset) in June 2013. Carrier Aggregation is important for carriers around the world as it allows them to create larger spectrum swaths by combining disparate spectrum assets. The larger the spectrum swaths, the better the efficiency of LTE; however, Carrier Aggregation is just one component of LTE-Advanced; it also includes other elements such as Coordinated Multi-Point (CoMP), Self-Optimizing Networks (SON), small cell enhancements, Enhanced Inter-Cell Interference Coordination (eICIC) and advanced Multi-Input Multi-Output (MIMO) antenna technology to improve network performance and capacity.

LTE-Advanced is not limited to Carrier Aggregation alone. It includes other elements or components, including **SON**. Therefore, it is highly likely that Samsung also provides its **SON solutions** to Sprint in U.S.A.

<http://www.5gamerica.org/en/resources/technology-education/lte-advanced/>

LTE-TDD and LTE-FDD network solutions:

Dallas, TX - October 30, 2013 - Sprint (NYSE: S), one of the leading wireless network operators in the U.S., has selected Samsung Telecommunications America, LLC (Samsung Mobile) to support the deployment of a leading edge network in the 2.5 GHz spectrum (3GPP Band 41) with Long Term Evolution Time Division Duplex (LTE-TDD) equipment.

Building on the strong business relationship developed during Sprint's Network Vision Project, the award confirms Samsung's global leadership in LTE-TDD network solutions as well as its technological experience through successful launches of both LTE-FDD and LTE-TDD in the US market. Samsung Mobile will provide radio network infrastructure, as well as implementation services, to deliver the next generation mobile broadband LTE network.

"We are honored and proud that Sprint has selected Samsung Mobile to support the implementation of their 2.5GHz LTE-TDD network, following our previous award for the operator's LTE-FDD deployment. This is another proof point for the innovation that Samsung is bringing to the wireless network industry," said Myung-ho Jung, Vice President of Samsung Telecommunications America. "The solution represents the future of advanced network capabilities and will deliver a new level of customer experience."

Consumer demand for more bandwidth and higher throughputs continues unabated, and as operators around the world look to maximize their spectrum assets to best serve their customers. Samsung Mobile's new radio solution helps address these challenges. Developed to support Sprint's vast spectrum holdings at 2.5 GHz, a single sector will be capable of delivering 1Gbps throughput, enhancing the consumer experience and opening opportunities for new services in the future.

Samsung has successfully launched both **LTE-FDD** and **LTE-TDD network solutions** in the US market. Sprint selected Samsung's **LTE-TDD** equipment and network solutions.

Samsung has been committed to LTE-TDD network deployments and commercialization since its launch of LTE-TDD network in Saudi Arabia, followed by a series of large-scale commercial LTE-TDD network deployments in North America and Asia.

Samsung's distinguished LTE solution is backed by key accomplishments over 30 years of experience and leadership in developing and commercializing telecom technologies. Based on field proven experience in LTE technologies, Samsung has successfully partnered with dozens of mobile service providers, helping them to implement the most advanced LTE solutions.

<http://www.samsung.com/global/business/networks/insights/news/sprint-selects-samsung-mobile-to-deliver-advanced-lte-wireless-network>

4. Attachments:

Attachment #1: Big Data Analytics for Telco Industry – Samsung.

Attachment #2: Samsung Centralized – RAN (C-RAN 2.0).

Attachment #3: Samsung Smart SON (O&M).

Attachment #4: Samsung CognitiV Analytics.

Attachment #8: Samsung High Density Cell Solutions.

Exhibit A

Transceiver with an Antennas/ Wireless Access Points

A transceiver with an antennas, such as, with one or more of such

1	Access Point WDS-A412I for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A412I/XAR
2	Access Point WEA403 for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A403I/XAR
3	Access Point WEA403SI for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A403SI/XAR
4	Access Point WEA453 for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A453E/XAR
5	Access Point WEA504I for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A504I/XAR
6	Access Point WEA514I for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A514I/XAR
7	CMC730 SM	https://web.archive.org/web/20100216075017/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=384
8	Femtocell	https://web.archive.org/web/20101013161410/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=102&b2b_prd_id=541
9	Femtocell (U-RAS Light Series 5)	https://web.archive.org/web/20101125185558/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=162
10	Macrocell	https://web.archive.org/web/20101013161410/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=102&b2b_prd_id=538

11	Macrocell (U-RAS Flexible)	https://web.archive.org/web/20101125185558/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=158
12	Macrocell (U-RAS Smart)	https://web.archive.org/web/20101125185558/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=159
13	PC Card (SWC-E100)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=167
14	PCMCIA Card (SPH-H1100)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=168
15	Picocell	https://web.archive.org/web/20101013161410/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=102&b2b_prd_id=540
16	Picocell (U-RAS Light Series 3F)	https://web.archive.org/web/20101125185558/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=161
17	Picocell (U-RAS Light Series 3P)	https://web.archive.org/web/20101125185558/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=160
18	U-RAS Compact	https://web.archive.org/web/20101013161410/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=102&b2b_prd_id=539
19	USB Dongle I (SWT-H200K)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=165
20	USB Dongle II (SPH-H1300)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=166
21	WLAN Access Point WEA302	http://web.archive.org/web/20131115090505/http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/explore

22	WLAN Access Point WEA302 for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A302CI/XAR
23	WLAN Access Point WEA303 Series	http://web.archive.org/web/20141001102319/http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A303CI/XAR
24	WLAN Access Point WEA303 Series for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A303CI/XAR

and/or the like.

Exhibit B

WIRELESS COMMUNICATIONS DEVICES

A wireless communications device or handset, such as, with one or more of such as

1	GT-P5210ZWYXAR-Galaxy Tab® 3 10.1	http://web.archive.org/web/20130907025448/http://www.samsung.com/us/mobile/galaxy-tab/GT-P5210ZWYXAR
2	GT-P8110-Nexus 10	http://web.archive.org/web/20131101235412/http://www.samsung.com/us/mobile/galaxy-tab/GT-P8110HAEXAR
3	SCH-I915SAAVZW-Galaxy Tab® 2 10.1	http://web.archive.org/web/20131231063532/http://www.samsung.com/us/mobile/galaxy-tab/SCH-I915SAAVZW
4	SCH-R270KRAUSC-Chrono™ 2	http://web.archive.org/web/20141101103725/http://www.samsung.com/us/mobile/cell-phones/SCH-R270KRAUSC
5	SCH-R480BKAUSC-Freeform® 5	http://web.archive.org/web/20141001063928/http://www.samsung.com/us/mobile/cell-phones/SCH-R480BKAUSC
6	SGH-M919N- Galaxy S® 4 (Metro PCS)	http://web.archive.org/web/20130921160242/http://www.samsung.com/us/mobile/cell-phones/SGH-M919RWATMB
7	SGH-T289MNATMB-Gravity® Q	http://web.archive.org/web/20140531220654/http://www.samsung.com/us/mobile/cell-phones/SGH-T289MNATMB
8	SGH-T699DABTMB-Galaxy S® Relay™ 4G	http://web.archive.org/web/20140531220753/http://www.samsung.com/us/mobile/cell-phones/SGH-T699DABTMB
9	SGH-T769NKBTMB-Galaxy S® Blaze™ 4G	http://web.archive.org/web/20140531220848/http://www.samsung.com/us/mobile/cell-phones/SGH-T769NKBTMB
10	SM-B780AZKAATT-Rugby® 4	http://web.archive.org/web/20141230193906/http://www.samsung.com/us/mobile/cell-phones/SM-B780AZKAATT
11	SM-R3500ZKAXAR-Gear™ Fit	http://web.archive.org/web/20141230204116/http://www.samsung.com/us/mobile/wearable-tech/SM-R3500ZKAXAR
12	SM-R3800GNAXAR-Gear™ 2	http://web.archive.org/web/20141230203942/http://www.samsung.com/us/mobile/wearable-tech/SM-R3800GNAXAR

13	SM-R3820ZKAXAR--Gear™ Live	http://web.archive.org/web/20141230204403/http://www.samsung.com/us/mobile/wearable-tech/SM-R3820ZKAXAR
14	SM-T210RGRSXAR- Galaxy Tab® 3 7.0 Garnet	http://web.archive.org/web/20140531205755/http://www.samsung.com/us/mobile/galaxy-tab/SM-T210RGRSXAR
15	SM-T210RZWYXAR-Galaxy Tab® 3 7.0	http://web.archive.org/web/20140531225258/http://www.samsung.com/us/mobile/galaxy-tab/SM-T210RZWYXAR
16	SM-T700NZWAXAR-Galaxy Tab® S 8.4"	http://web.archive.org/web/20141230192405/http://www.samsung.com/us/mobile/galaxy-tab/SM-T700NZWAXAR
17	SPH-L520ZKASPR-Galaxy S® 4 mini	http://web.archive.org/web/20140531215843/http://www.samsung.com/us/mobile/cell-phones/SPH-L520ZKASPR
18	SPH-L600ZKASPR-Galaxy Mega™	http://web.archive.org/web/20140531220013/http://www.samsung.com/us/mobile/cell-phones/SPH-L600ZKASPR
19	SCH-R960ZKAUSC-Galaxy Mega™	http://web.archive.org/web/20141001063903/http://www.samsung.com/us/mobile/cell-phones/SCH-R960ZKAUSC
20	SCH-U680MAAVZW-Convoy™ 3	http://web.archive.org/web/20141230194523/http://www.samsung.com/us/mobile/cell-phones/SCH-U680MAAVZW
21	a197 - SGH-A197	http://web.archive.org/web/20111211124947/http://www.samsung.com:80/us/mobile/cell-phones/SGH-A197ZKAATT
22	ACE (SPH-i325)	https://web.archive.org/web/20090204042303/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-I325DLASPR
23	Add-on module DS-5064B	http://web.archive.org/web/20141012012753/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDP64SDSD/XAR
24	Alias 2 (SCH-u750)	https://web.archive.org/web/20100211025212/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-U750HAAVZW/index.idx?pagetype=prd_detail&returnurl=
25	ATIV Odyssey	http://web.archive.org/web/20140801043039/http://www.samsung.com/us/mobile/cell-phones/SCH-R860MSAUSC
26	ATIV Smart PC 4G LTE 700TC	http://web.archive.org/web/20130714065437/http://www.samsung.com:80/us/business/computing/tablet-pcs/XE700T1C-HA1US

27	ATIV Smart PC 500TC	http://web.archive.org/web/20130723130053/http://www.samsung.com:80/us/business/computing/tablet-pcs/XE500T1C-A05US#
28	ATIV Smart PC Pro 700T	http://web.archive.org/web/20130709221727/http://www.samsung.com:80/us/business/mobility/tablet-pcs/XE700T1C-A04US
29	Behold (SGH-t919)	https://web.archive.org/web/20100210181904/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T919CNATMB/index.idx?pagetype=prd_detail&returnurl=
30	Behold® II (SGH-t939)	https://web.archive.org/web/20100127140621/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T939MNATMB/index.idx?pagetype=prd_detail&returnurl=
31	Captivate - SGH-I897	http://web.archive.org/web/20120107110438/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I897ZKAATT
32	Captivate Glide - SGH-I927	http://web.archive.org/web/20111219142110/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I927ZKAATT
33	Chrono™ 2	http://web.archive.org/web/20140801043418/http://www.samsung.com/us/mobile/cell-phones/SCH-R270KRAUSC
34	Comeback (SGH-t559)	https://web.archive.org/web/20100211034428/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T559PPATMB/index.idx?pagetype=prd_detail&returnurl=
35	Convoy™ (SCH-u640)	https://web.archive.org/web/20100210115239/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-U640EKAVZW/index.idx?pagetype=prd_detail&returnurl=
36	Digital Phone iDCS-18B	http://web.archive.org/web/20141012005328/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDF18SED/XAR
37	Digital Phone iDCS-28B	http://web.archive.org/web/20140909050332/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDF28SED/XAR

38	Digital Phone iDCS-8B	http://web.archive.org/web/20141012005323/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDF08SED/XAR
39	DoubleTime - SGH-I857	http://web.archive.org/web/20111210064541/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I857ZAAATT
40	DS-5007S	http://web.archive.org/web/20150218070343/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDP07SBD/XAR
41	DS-5014D	http://web.archive.org/web/20150407162402/http://www.samsung.com/us/business/business-communication-systems/smb-communication-solutions/KPDP14SED/XAR
42	DS-5021D	http://web.archive.org/web/20150208052844/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDP21SED/XAR
43	DS-5064B	http://web.archive.org/web/20141012012753/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDP64SDSD/XAR
44	Epix (SGH-i907)	https://web.archive.org/web/20090204002321/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=att&model_cd=SGH-I907ZKAATT
45	Eternity (SGH-a867)	https://web.archive.org/web/20090204060528/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=att&model_cd=SGH-A867ZKAATT
46	Exhibit™ II 4G - SGH-T679	http://web.archive.org/web/20120215153810/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T679DBBTMB
47	Flight II QWERTY - SGH-A927	http://web.archive.org/web/20111210231017/http://www.samsung.com:80/us/mobile/cell-phones/SGH-A927ZAAATT
48	Focus - SGH-I677	http://web.archive.org/web/20120107162851/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I677DAAATT
49	Focus S - SGH-I937	http://web.archive.org/web/20120107145501/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I937OKAATT

50	Focus® 2 - SGH-I667	http://web.archive.org/web/20121021111739/http://www.samsung.com/us/mobile/cell-phones/SGH-I667UWAATT
51	Freeform® 4	http://web.archive.org/web/20140801043526/http://www.samsung.com/us/mobile/cell-phones/SCH-R390ZBAUSC
52	Galaxy Avant	http://web.archive.org/web/20140801034736/http://www.samsung.com/us/mobile/cell-phones/SM-G386TZKATMB
53	Galaxy Express	http://web.archive.org/web/20140801041125/http://www.samsung.com/us/mobile/cell-phones/SGH-I437ZSAATT
54	Galaxy Express GoPhone - SGH-I437ZSPATT	http://web.archive.org/web/20130715041332/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I437ZSPATT
55	Galaxy Express™	http://web.archive.org/web/20140801041125/http://www.samsung.com/us/mobile/cell-phones/SGH-I437ZSAATT
56	Galaxy Legend - SCH-I200PP	http://web.archive.org/web/20131014003242/http://www.samsung.com:80/us/mobile/cell-phones/SCH-I200ZKPVZW
57	Galaxy Mega	http://web.archive.org/web/20140801041053/http://www.samsung.com/us/mobile/cell-phones/SGH-I527ZKBATT
58	Galaxy Mega - SGH-I527	http://web.archive.org/web/20130903070944/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I527ZKBATT
59	Galaxy Metrix™ 4G	http://web.archive.org/web/20140801043258/http://www.samsung.com/us/mobile/cell-phones/SCH-I405BAAUSC
60	Galaxy Nexus	http://web.archive.org/web/20131107225926/http://www.samsung.com/us/mobile/cell-phones/SPH-L700ZKASPR
61	Galaxy Nexus - SCH-I515	http://web.archive.org/web/20120215011233/http://www.samsung.com:80/us/mobile/cell-phones/SCH-I515MSAVZW
62	Galaxy Note 10.1	http://web.archive.org/web/20130206022748/http://www.samsung.com/us/2012-galaxy-note-wifi/
63	Galaxy Note® 10.1 (Wi-Fi)	http://web.archive.org/web/20130703003313/http://www.samsung.com/us/mobile/galaxy-tab/GT-N8013EAVXAR
64	Galaxy Note® 8.0	http://web.archive.org/web/20130708070114/http://www.samsung.com/us/mobile/galaxy-tab/GT-N5110ZWYXAR
65	Galaxy Note® II - SGH-I317ZWAATT	http://web.archive.org/web/20140301155347/http://www.samsung.com/us/mobile/cell-phones/SGH-I317ZWAATT
66	Galaxy S® 4 Active - SGH-I537	http://web.archive.org/web/20130829181109/http://www.samsung.com/us/mobile/cell-phones/SGH-I537ZAAATT

67	Galaxy S® 4 mini - SPH-L520	http://web.archive.org/web/20131119002544/http://www.samsung.com:80/us/mobile/cell-phones/SPH-L520ZKASPR
68	Galaxy S® Aviator	http://web.archive.org/web/20140801043601/http://www.samsung.com/us/mobile/cell-phones/SCH-R930DSAUSC
69	Galaxy S® Blaze™ 4G	http://web.archive.org/web/20131021172219/http://www.samsung.com/us/mobile/cell-phones/SGH-T769NKBTMB
70	Galaxy S® III - SGH-T999ZAATMB	http://web.archive.org/web/20130704050516/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T999ZAATMB
71	Galaxy S® III Mini	http://web.archive.org/web/20140801040913/http://www.samsung.com/us/mobile/cell-phones/SM-G730AMBAATT
72	Galaxy S® 5 Sport	http://web.archive.org/web/20140801034802/http://www.samsung.com/us/mobile/cell-phones/SM-G860PZBASPR
73	Galaxy SII - SGH-I777	http://web.archive.org/web/20111231073349/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I777ZKAATT
74	Galaxy SII Skyrocket - SGH-I727	http://web.archive.org/web/20111229070642/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I727MSAATT
75	Galaxy SII, Epic 4G - SPH-D710	http://web.archive.org/web/20120107104310/http://www.samsung.com:80/us/mobile/cell-phones/SPH-D710ZKASPR
76	Galaxy Stellar - SCH-I200	http://web.archive.org/web/20140220185002/http://www.samsung.com/us/mobile/cell-phones/SCH-I200ZKAVZW
77	Galaxy Stratosphere™ II	http://web.archive.org/web/20131204053231/http://www.samsung.com/us/mobile/cell-phones/SCH-I415SAAVZW
78	Galaxy Tab A	http://www.samsung.com/us/business/mobility/tablets/SM-T587PZKASPR
79	Galaxy Tab® 3 8.0 (Wi-Fi)	http://web.archive.org/web/20130629221808/http://www.samsung.com:80/us/mobile/galaxy-tab/SM-T3100ZWYXAR
80	Galaxy Tab® 4 10.1	http://web.archive.org/web/20140729151606/http://www.samsung.com/us/mobile/galaxy-tab/SM-T537VYKAVZW
81	Galaxy Tab® 4 10.1	http://web.archive.org/web/20140725081220/http://www.samsung.com/us/mobile/galaxy-tab/SM-T537RZWAUSC
82	Galaxy Tab® 4 8.0	http://web.archive.org/web/20140729151519/http://www.samsung.com/us/mobile/galaxy-tab/SM-T337AZWAATT
83	Galaxy Tab® 4 8.0	http://web.archive.org/web/20140729151547/http://www.samsung.com/us/mobile/galaxy-tab/SM-T337TZWATMB

84	Galaxy Tab® 4 8.0	http://web.archive.org/web/20140727043245/http://www.samsung.com/us/mobile/galaxy-tab/SM-T337VYKAVZW
85	Galaxy Tab™ 10.1	http://web.archive.org/web/20120113212004/http://www.samsung.com:80/us/business/galaxy-tab/GT-P7510MAVXAB
86	Galaxy Tab™ 10.1-SCH-I905	https://web.archive.org/web/20120428234430/http://www.samsung.com:80/us/mobile/galaxy-tab/SCH-I905ZKAUSC
87	Galaxy Tab™ 2 - GT-P3113	https://web.archive.org/web/20120503223521/http://www.samsung.com:80/us/mobile/galaxy-tab/GT-P3113TSYXAR
88	Galaxy Tab™ 8.9- GT-P7310/M16	http://web.archive.org/web/20120213131842/http://www.samsung.com:80/us/business/galaxy-tab/GT-P7310MAYXAR
89	Galaxy Tab™ 8.9 - GT-P7310/M32	http://web.archive.org/web/20120111011921/http://www.samsung.com:80/us/business/galaxy-tab/GT-P7310MAVXAR
90	Galaxy Victory™ 4G	http://web.archive.org/web/20131021172102/http://www.samsung.com/us/mobile/cell-phones/SPH-L300ZSASPR
91	Gravity® TXT QWERTY	http://web.archive.org/web/20130206050519/http://www.samsung.com/us/mobile/cell-phones/SGH-T379UABTMB
92	Gravity™ (SGH-t459)	https://web.archive.org/web/20100210125108/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T459BGATMB/index.idx?pagetype=prd_detail&returnurl=
93	GT-N8013EAYXAR-Galaxy Note® 10.1	http://web.archive.org/web/20130827165344/http://www.samsung.com/us/mobile/galaxy-tab/GT-N8013EAYXAR
94	GT-P1010/W16-Galaxy Tab™ 7.0	https://web.archive.org/web/20120507150743/http://www.samsung.com:80/us/mobile/galaxy-tab/GT-P1010CWAXAR
95	GT-P3113TSYXAR-Galaxy Tab™ 2 7.0	http://web.archive.org/web/20130903054725/http://www.samsung.com/us/mobile/galaxy-tab/GT-P3113TSYXAR
96	GT-P5113TSYXAR-Galaxy Tab™ 2 10.1	http://web.archive.org/web/20130907215606/http://www.samsung.com/us/mobile/galaxy-tab/GT-P5113TSYXAR
97	GT-P5113ZWYXAR-Galaxy Tab® 2 10.1	http://web.archive.org/web/20130907141008/http://www.samsung.com/us/mobile/galaxy-tab/GT-P5113ZWYXAR
98	GT-P6210-Galaxy Tab™ 7.0 Plus	https://web.archive.org/web/20120513200803/http://www.samsung.com/us/mobile/galaxy-tab/GT-P6210MAYXAR
99	GT-P7510/M16-Galaxy Tab™ 10.1	http://web.archive.org/web/20120427025408/http://www.samsung.com:80/us/mobile/galaxy-tab/GT-P7510MAYXAB

100	Gusto® 2	http://web.archive.org/web/20130303023923/http://www.samsung.com:80/us/mobile/cell-phones/SCH-U365HAAVZW
101	Highlight (SGH-t749)	https://web.archive.org/web/20100211160827/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T749ZAATMB/index.idx?pagetype=prd_detail&returnurl=
102	Highnote (SPH-m630)	https://web.archive.org/web/20090107070351/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M630ZKASPR
103	iDCS-18B	http://web.archive.org/web/20150320204236/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDF18SED/XAR
104	iDCS-28B	http://web.archive.org/web/20150228232029/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDF28SED/XAR
105	IDCS-8B	http://web.archive.org/web/20141012005323/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/KPDF08SED/XAR
106	Infuse™ 4G - SGH-I997	http://web.archive.org/web/20120103215112/http://www.samsung.com:80/us/mobile/cell-phones/SGH-I997ZKAATT
107	Instinct (SPH-m800)	https://web.archive.org/web/20081219213353/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M800ZKASPR
108	Intensity (SCH-u450)	https://web.archive.org/web/20100211031353/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-U450TBAVZW/index.idx?pagetype=prd_detail&returnurl=
109	Intercept™ QWERTY - SPH-M910	http://web.archive.org/web/20120107082239/http://www.samsung.com:80/us/mobile/cell-phones/SPH-M910ZKASPR
110	IP add-on module SMT-I5264	http://web.archive.org/web/20140328122005/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I5264W/XAR

111	IP Phone SMT-I3105	http://web.archive.org/web/20141012012738/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I3105N/XAR
112	IP Phone SMT-I5210	http://web.archive.org/web/20131129202047/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I5210N/XAR
113	IP Phone SMT-I5220S	http://web.archive.org/web/20150104193215/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/SMT-I5220S/XAR
114	IP Phone SMT-I5230	http://web.archive.org/web/20131201010833/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I5230N/XAR
115	IP Phone SMT-I5243	http://web.archive.org/web/20131201040007/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I5243N/XAR
116	IP Phone SMT-I5343 for Business	http://www.samsung.com/us/business/business-communication-systems/smb-communication-solutions/SMT-I5343X/XAR
117	IP Phone SMT-i6011 for Business	http://www.samsung.com/us/business/business-communication-systems/smb-communication-solutions/SMT-I6011K/XAR
118	IP Phone SMT-i6021 for Business	http://www.samsung.com/us/business/business-communication-systems/smb-communication-solutions/SMT-I6021K/XAR
119	Laptop (NT-Q45)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=164
120	m370 - SPH-M370	http://web.archive.org/web/20120108072701/http://www.samsung.com:80/us/mobile/cell-phones/SPH-M370BAASPR
121	M400 - SPH-M400MSASPR	http://web.archive.org/web/20140301011745/http://www.samsung.com/us/mobile/cell-phones/SPH-M400MSASPR
122	Memoir (SGH-t929)	https://web.archive.org/web/20100127140616/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-

		mobile-phones/SGH-T929ZKATMB/index.idx?pagetype=prd_detail&returnurl=
123	Mythic Touchscreen - SGH-A897	http://web.archive.org/web/20111219130447/http://www.samsung.com:80/us/mobile/cell-phones/SGH-A897ZKAATT-specs
124	Nexus S 4G - SPH-D720	http://web.archive.org/web/20120107225743/http://www.samsung.com:80/us/mobile/cell-phones/SPH-D720ZKASPR
125	Nexus S 4G - SPH-D720	http://web.archive.org/web/20120107225743/http://www.samsung.com:80/us/mobile/cell-phones/SPH-D720ZKASPR
126	Omnia® II (SCH-i920)	https://web.archive.org/web/20091217082234/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-I920DAAVZW/index.idx?pagetype=prd_detail&INT=us_home_image3_1202_schi920
127	Omnia™ (SCH-i910)	https://web.archive.org/web/20100119022105/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-I910ZKAVZW/index.idx?pagetype=prd_detail&returnurl=
128	PDA (SPH-M8100)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=160
129	PDA (SPH-M8200)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=159
130	PMP (SWT-W100K)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=163
131	Propel (SGH-a767)	https://web.archive.org/web/20090204042016/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=att&model_cd=SGH-A767WRAATT
132	r375c (TracFone) - SCH-R375C	http://web.archive.org/web/20120214120555/http://www.samsung.com:80/us/mobile/cell-phones/SCH-R375ZKATFN

133	Rant (SPH-m540)	https://web.archive.org/web/20081219185655/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M540ZRASPR
134	Renown™ (SCH-u810)	https://web.archive.org/web/20100211034432/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-U810GNAVZW/index.idx?pagetype=prd_detail&returnurl=
135	Replenish - SPH-M580	http://web.archive.org/web/20111220025816/http://www.samsung.com:80/us/mobile/cell-phones/SPH-M580ZKASPR
136	Repp	http://web.archive.org/web/20120317192504/http://www.samsung.com/us/mobile/cell-phones/SCH-R680WRAUSC
137	Repp - SCH-R680	http://web.archive.org/web/20120109051423/http://www.samsung.com:80/us/mobile/cell-phones/SCH-R680WRAXAR
138	Rogue™ (SCH-u960)	https://web.archive.org/web/20100211025217/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-U960ZSAVZW/index.idx?pagetype=prd_detail&returnurl=
139	Rugby (SGH-a837)	https://web.archive.org/web/20090204061410/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=att&model_cd=SGH-A837DKAATT
140	Rugby II - SGH-A847	http://web.archive.org/web/20111220025745/http://www.samsung.com:80/us/mobile/cell-phones/SGH-A847ZAAATT
141	Rugby® III	http://web.archive.org/web/20140801040941/http://www.samsung.com/us/mobile/cell-phones/SGH-A997DAAATT
142	S2	http://www.samsung.com/us/mobile/wearables/
143	s3	http://www.samsung.com/us/mobile/wearables/
144	Saga™ (SCH-i770)	https://web.archive.org/web/20100210115235/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-I770DBAVZW/index.idx?pagetype=prd_detail&returnurl=
145	Samsung Array	http://web.archive.org/web/20140301011909/http://www.samsung.com/us/mobile/cell-phones/SPH-M390ZSASPR

146	Samsung Ativ S™ Neo (Sprint)	http://web.archive.org/web/20140801042232/http://www.samsung.com/us/mobile/cell-phones/SPH-I800HNASPR
147	Samsung Conquer™4G - SPH-D600	http://web.archive.org/web/20111209113449/http://www.samsung.com:80/us/mobile/cell-phones/SPH-D600ZKASPR
148	Samsung Continuum i400 for Business	http://www.samsung.com/us/business/mobility/mobile-phones/SCH-I400ZKAVZW
149	Samsung Convoy™ 3	http://web.archive.org/web/20140102075501/http://www.samsung.com/us/mobile/cell-phones/SCH-U680MAAVZW
150	Samsung Epic - SPH-D700	http://web.archive.org/web/20120107035541/http://www.samsung.com:80/us/mobile/cell-phones/SPH-D700ZKASPR
151	Samsung Eternity II - SGH-A597	http://web.archive.org/web/20111211093033/http://www.samsung.com:80/us/mobile/cell-phones/SGH-A597ZBAATT
152	Samsung Flight - SGH-A797	http://web.archive.org/web/20111222200015/http://www.samsung.com:80/us/mobile/cell-phones/SGH-A797ZSAATT
153	Samsung Galaxy Appeal for Business	http://www.samsung.com/us/business/mobility/mobile-phones/SGH-I827ZSAATT
154	Samsung Galaxy Core Prime	http://www.samsung.com/us/business/mobility/mobile-phones/SM-G360TZWATMB
155	Samsung Galaxy Exhilarate for Business	http://www.samsung.com/us/business/mobility/mobile-phones/SGH-I577YKAATT
156	Samsung Galaxy Express	http://www.samsung.com/us/business/mobility/mobile-phones/SGH-I437ZSAATT
157	Samsung Galaxy Grand Prime	http://www.samsung.com/us/business/mobility/mobile-phones/SM-G530PZAASPR
158	Samsung Galaxy J3, 16GB	http://www.samsung.com/us/business/mobility/mobile-phones/SM-J320AZWAATT
159	Samsung Galaxy Note - SGH-I717	http://web.archive.org/web/20121021122802/http://www.samsung.com/us/mobile/cell-phones/SGH-I717ZBAATT
160	Samsung Galaxy S® III - SGH-I747MBBATT	http://web.archive.org/web/20121021101406/http://www.samsung.com/us/mobile/cell-phones/SGH-I747MBBATT
161	Samsung Galaxy S6, 128GB	http://www.samsung.com/us/business/mobility/mobile-phones/SM-G920RZKFUSC

162	Samsung Galaxy S8, 64GB	http://www.samsung.com/us/business/mobility/mobile-phones/SM-G950UZKAATT
163	Samsung Galaxy S™ II - SGH-T989	http://web.archive.org/web/20120215041652/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T989ZKBTMB
164	Samsung Galaxy Tab S	http://www.samsung.com/us/business/mobility/tablets/SM-T820NZKAXAR
165	Samsung Galaxy-S7	http://www.samsung.com/us/business/discover/galaxy-s7/
166	Samsung Gear	http://www.samsung.com/us/mobile/wearables/
167	Samsung Gravity™ 2 (SGH-t469)	https://web.archive.org/web/20100210125113/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T469DAATMB/index.idx?pagetype=prd_detail&returnurl=
168	Samsung Rugby® III - SGH-A997	http://web.archive.org/web/20130913024242/http://www.samsung.com/us/mobile/cell-phones/SGH-A997DAAATT
169	Samsung Strive Qwerty - SGH-A687	http://web.archive.org/web/20111218005149/http://www.samsung.com:80/us/mobile/cell-phones/SGH-A687ZPAATT
170	Samsung Transform - SPH-M930	http://web.archive.org/web/20111209113449/http://www.samsung.com:80/us/mobile/cell-phones/SPH-D600ZKASPR
171	SCH-I100-Gem™	http://web.archive.org/web/20120911061808/http://www.samsung.com:80/us/mobile/cell-phones/SCH-I100ZKAUSC
172	SCH-I110-Illusion®	http://web.archive.org/web/20120429183025/http://www.samsung.com:80/us/mobile/cell-phones/SCH-I110ZKAVZW
173	SCH-I200ZKAVZW-Galaxy Stellar™	http://web.archive.org/web/20140531215620/http://www.samsung.com/us/mobile/cell-phones/SCH-I200ZKAVZW
174	SCH-I200ZKPVZW-Galaxy Legend™	http://web.archive.org/web/20140531215654/http://www.samsung.com/us/mobile/cell-phones/SCH-I200ZKPVZW
175	SCH-I405U-Galaxy Metrix™ 4G	http://web.archive.org/web/20120908013110/http://www.samsung.com:80/us/mobile/cell-phones/SCH-I405BAAUSC
176	SCH-I435ZKAVZW-Galaxy S® 4 Mini	http://web.archive.org/web/20141230194331/http://www.samsung.com/us/mobile/cell-phones/SCH-I435ZKAVZW
177	SCH-I500-Mesmerize™ i500	http://web.archive.org/web/20121010092132/http://www.samsung.com/us/mobile/cell-phones/SCH-I500RKAUSC

178	SCH-I510-Droid Charge	http://web.archive.org/web/20120429183040/http://www.samsung.com:80/us/mobile/cell-phones/SCH-I510RAAVZW
179	SCH-I535MBPVZW-Galaxy S® III	http://web.archive.org/web/20141230193124/http://www.samsung.com/us/mobile/cell-phones/SCH-I535MBPVZW
180	SCH-I535ZKBVZW-Galaxy S® III	http://web.archive.org/web/20141230194431/http://www.samsung.com/us/mobile/cell-phones/SCH-I535ZKBVZW
181	SCH-I545L-Galaxy S4	http://web.archive.org/web/20130918132119/http://www.samsung.com:80/us/mobile/cell-phones/SCH-I545ZKALRA
182	SCH-I545ZBAVZW-Galaxy S® 4	http://web.archive.org/web/20141230192749/http://www.samsung.com/us/mobile/cell-phones/SCH-I545ZBAVZW
183	SCH-I545ZWA VZW-Galaxy S® 4	http://web.archive.org/web/20141230192859/http://www.samsung.com/us/mobile/cell-phones/SCH-I545ZWA VZW
184	SCH-I605-Galaxy Note® II	http://web.archive.org/web/20130829173416/http://www.samsung.com/us/mobile/cell-phones/SCH-I605TSAVZW
185	SCH-I605TSAVZW- Galaxy Note® II	http://web.archive.org/web/20141230194359/http://www.samsung.com/us/mobile/cell-phones/SCH-I605TSAVZW
186	SCH-I705MKAVZW-Galaxy Tab® 2 7.0	http://web.archive.org/web/20131115110355/http://www.samsung.com/us/mobile/galaxy-tab/SCH-I705MKAVZW
187	SCH-I800-Galaxy Tab 7.0	https://web.archive.org/web/20120428234403/http://www.samsung.com:80/us/mobile/galaxy-tab/SCH-I800NSAUSC
188	SCH-I815 - Galaxy Tab™ 7.	https://web.archive.org/web/20120531053424/http://www.samsung.com/us/mobile/galaxy-tab/SCH-I815LSAVZW
189	SCH-I830 (IP-830W)	https://web.archive.org/web/20090204004023/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SCH-I830MSASPR
190	SCH-I915SAAVZW-Galaxy Tab® 2 10.1	http://web.archive.org/web/20131231063532/http://www.samsung.com/us/mobile/galaxy-tab/SCH-I915SAAVZW
191	SCH-I925-Galaxy Note® 10.1	http://web.archive.org/web/20130701120137/http://www.samsung.com/us/mobile/galaxy-tab/SCH-I925EAAVZW
192	SCH-I930-ATIV Odyssey™	http://web.archive.org/web/20130206050309/http://www.samsung.com/us/mobile/cell-phones/SCH-I930MSAVZW
193	SCH-LC11R	http://web.archive.org/web/20121115081942/http://www.samsung.com/us/mobile/cell-phones/SCH-LC11ZKAUSC

194	SCH-R260-Chrono™	http://web.archive.org/web/20130206050455/http://www.samsung.com/us/mobile/cell-phones/SCH-R260DAAUSC
195	SCH-R270U-Chrono 2	http://web.archive.org/web/20121113050315/http://www.samsung.com/us/mobile/cell-phones/SCH-R270KRAUSC
196	SCH-R530-Galaxy S® III	http://web.archive.org/web/20120911141149/http://www.samsung.com:80/us/mobile/cell-phones/SCH-R530MBBUSC
197	SCH-R580-Profile™	http://web.archive.org/web/20121029233939/http://www.samsung.com:80/us/mobile/cell-phones/SCH-R580ZKAUSC
198	SCH-R640-Character™	http://web.archive.org/web/20120903234413/http://www.samsung.com:80/us/mobile/cell-phones/SCH-R640DAAUSC
199	SCH-R760-Galaxy S II	http://web.archive.org/web/20120905112746/http://www.samsung.com:80/us/mobile/cell-phones/SCH-R760IBAUSC
200	SCH-R820-Galaxy Admire™ 4G	http://web.archive.org/web/20130206050450/http://www.samsung.com/us/mobile/cell-phones/SCH-R820ZWAMTR
201	SCH-R830-Galaxy Axiom	http://web.archive.org/web/20130206050308/http://www.samsung.com/us/mobile/cell-phones/SCH-R830ZSAUSC
202	SCH-R850-Caliber™	http://web.archive.org/web/20130206050453/http://www.samsung.com/us/mobile/cell-phones/SCH-R850ZKAUSC
203	SCH-R860MSAUSC-ATIV Odyssey™	http://web.archive.org/web/20141001063952/http://www.samsung.com/us/mobile/cell-phones/SCH-R860MSAUSC
204	SCH-R880-Acclaim™	http://web.archive.org/web/20120902094553/http://www.samsung.com:80/us/mobile/cell-phones/SCH-R880MBAUSC
205	SCH-R890ZKAUSC-Galaxy S® 4 mini	http://web.archive.org/web/20141001063814/http://www.samsung.com/us/mobile/cell-phones/SCH-R890ZKAUSC
206	SCH-R949	http://web.archive.org/web/20130206022816/http://www.samsung.com/us/mobile/cell-phones/SCH-R950TSAUSC
207	SCH-R970-Galaxy S® 4	http://web.archive.org/web/20130921135252/http://www.samsung.com/us/mobile/cell-phones/SCH-R970ZWAUSC
208	SCH-R970X-Galaxy S® 4	http://web.archive.org/web/20130921141023/http://www.samsung.com/us/mobile/cell-phones/SCH-R970ZWACSP
209	SCH-U320- Haven™	http://web.archive.org/web/20120426071234/http://www.samsung.com:80/us/mobile/cell-phones/SCH-U320HAAVZW
210	SCH-U360-Gusto™	http://web.archive.org/web/20120428185406/http://www.samsung.com:80/us/mobile/cell-phones/SCH-U360MAAVZW

211	SCH-U370-Reality™	http://web.archive.org/web/20120427043632/http://www.samsung.com:80/us/mobile/cell-phones/SCH-U370XKZVZW
212	SCH-U380-Brightside™ QWERTY	http://web.archive.org/web/20120427025116/http://www.samsung.com:80/us/mobile/cell-phones/SCH-U380HKAVZW
213	SCH-U460-Intensity™ II	http://web.archive.org/web/20120428160815/http://www.samsung.com:80/us/mobile/cell-phones/SCH-U460EAAVZW
214	SCH-U485NSAVZW-Intensity® III	http://web.archive.org/web/20141001062816/http://www.samsung.com/us/mobile/cell-phones/SCH-U485NSAVZW
215	SCH-U660-Convoy™ 2	http://web.archive.org/web/20120428185426/http://www.samsung.com:80/us/mobile/cell-phones/SCH-U660CNAVZW
216	SCH-U820-Reality™	http://web.archive.org/web/20120429135246/http://www.samsung.com:80/us/mobile/cell-phones/SCH-U820ZKAVZW
217	SGH-a137	https://web.archive.org/web/20090204061831/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=att&model_cd=SGH-A137IBCATT
218	SGH-a637	https://web.archive.org/web/20090204060750/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=att&model_cd=SGH-A637CWAATT
219	SGH-a777	https://web.archive.org/web/20090204060846/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=att&model_cd=SGH-A777EGAATT
220	SGH-I257AIAATT-Galaxy S 4® Mini	http://web.archive.org/web/20141230193006/http://www.samsung.com/us/mobile/cell-phones/SGH-I257AIAATT
221	SGH-I257ZKAATT-Galaxy S 4® Mini	http://web.archive.org/web/20141230192934/http://www.samsung.com/us/mobile/cell-phones/SGH-I257ZKAATT
222	SGH-I337-Galaxy S4	http://web.archive.org/web/20130803185415/http://www.samsung.com:80/us/business/mobility/mobile-phones/SGH-I337ZWAATT
223	SGH-I337ZRAATT- Galaxy S® 4	http://web.archive.org/web/20141230194054/http://www.samsung.com/us/mobile/cell-phones/SGH-I337ZRAATT

224	SGH-I467ZWAATT-Galaxy Note® 8.0	http://web.archive.org/web/20130629033650/http://www.samsung.com:80/us/mobile/galaxy-tab/SGH-I467ZWAATT
225	SGH-I537ZAAATT-Galaxy S® 4 Active™	http://web.archive.org/web/20141230194022/http://www.samsung.com/us/mobile/cell-phones/SGH-I537ZAAATT
226	SGH-I547-Galaxy Rugby Pro™	http://web.archive.org/web/20130728132611/http://www.samsung.com:80/us/business/mobility/mobile-phones/SGH-I547ZKAATT
227	SGH-I747-Galaxy S3	http://web.archive.org/web/20130916063504/http://www.samsung.com:80/us/business/mobility/mobile-phones/SGH-I747ZRBATT
228	SGH-I957-Galaxy Tab™ 8.9	https://web.archive.org/web/20120531054014/http://www.samsung.com/us/mobile/galaxy-tab/SGH-I957ZKAATT
229	SGH-I987-Galaxy Tab™ 7.0	https://web.archive.org/web/20120429135457/http://www.samsung.com:80/us/mobile/galaxy-tab/SGH-I987ZKAATT
230	SGH-S730G-Galaxy Discover	http://web.archive.org/web/20130206050259/http://www.samsung.com/us/mobile/cell-phones/SGH-S730HKATFN
231	SGH-t139	https://web.archive.org/web/20100210115224/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T139IAATMB/index.idx?pagetype=prd_detail&returnurl=
232	SGH-T159YKBTMB	http://web.archive.org/web/20141230195550/http://www.samsung.com/us/mobile/cell-phones/SGH-T159YKBTMB
233	SGH-T159YKBTMB-t159	http://web.archive.org/web/20140531220821/http://www.samsung.com/us/mobile/cell-phones/SGH-T159YKBTMB
234	SGH-T199ZKATMB	http://web.archive.org/web/20141230195442/http://www.samsung.com/us/mobile/cell-phones/SGH-T199ZKATMB
235	SGH-T199ZKPTMB	http://web.archive.org/web/20140531214002/http://www.samsung.com/us/mobile/cell-phones/SGH-T199ZKPTMB
236	SGH-t239	https://web.archive.org/web/20100211160330/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T239DAATMB/index.idx?pagetype=prd_detail&returnurl=
237	SGH-T249	https://web.archive.org/web/20120430041225/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T249DABTMB

238	SGH-T259	https://web.archive.org/web/20120903162854/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T259HBBTMB
239	SGH-T289MNATMB-Gravity® Q	http://web.archive.org/web/20141230195501/http://www.samsung.com/us/mobile/cell-phones/SGH-T289MNATMB
240	SGH-t349	https://web.archive.org/web/20100211021259/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T349EBATMB/index.idx?pagetype=prd_detail&returnurl=
241	SGH-T369	https://web.archive.org/web/20120430033433/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T369ZKATMB
242	SGH-T379-Gravity®	http://web.archive.org/web/20120428095614/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T379UABTMB
243	SGH-T399DNATMB-Galaxy Light™	http://web.archive.org/web/20141230195611/http://www.samsung.com/us/mobile/cell-phones/SGH-T399DNATMB
244	SGH-T479-Gravity® 3	https://web.archive.org/web/20120506225721/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T479RNATMB
245	SGH-T499-Dart™	https://web.archive.org/web/20120629032316/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T499MABTMB
246	SGH-T599DAATMB-Galaxy Exhibit™	http://web.archive.org/web/20141230195638/http://www.samsung.com/us/mobile/cell-phones/SGH-T599DAATMB
247	SGH-t659	https://web.archive.org/web/20100210115229/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/t-mobile-phones/SGH-T659OSATMB/index.idx?pagetype=prd_detail&returnurl=
248	SGH-T699DABTMB-Galaxy S® Relay™ 4G	http://web.archive.org/web/20141230195525/http://www.samsung.com/us/mobile/cell-phones/SGH-T699DABTMB
249	SGH-T759-Exhibit™ 4G	https://web.archive.org/web/20120428161132/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T759ZKBTMB
250	SGH-T839-Sidekick® 4G	https://web.archive.org/web/20120427231113/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T839HABTMB
251	SGH-T859-Galaxy Tab™ 10.1	https://web.archive.org/web/20120430033629/http://www.samsung.com:80/us/mobile/galaxy-tab/SGH-T859UWB TMB
252	SGH-T869 - Galaxy Tab 7.0 Plus	https://web.archive.org/web/20120427025443/http://www.samsung.com:80/us/mobile/galaxy-tab/SGH-T869MABTMB

253	SGH-T888-Galaxy Note® II	http://web.archive.org/web/20130206022811/http://www.samsung.com/us/mobile/cell-phones/SGH-T889TSATMB
254	SGH-T959V-Galaxy S™ 4G	https://web.archive.org/web/20120511000934/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T959HABTMB
255	SGH-T959-Vibrant	https://web.archive.org/web/20120513200829/http://www.samsung.com/us/mobile/cell-phones/SGH-T959ZKATMB
256	SM-B311VZKPVZW	http://web.archive.org/web/20140531215301/http://www.samsung.com/us/mobile/cell-phones/SM-B311VZKPVZW
257	SM-C105AZWAATT-Galaxy S® 4 zoom™	http://web.archive.org/web/20141230194121/http://www.samsung.com/us/mobile/cell-phones/SM-C105AZWAATT
258	SM-G730VMBAVZW-Galaxy S® III Mini	http://web.archive.org/web/20141230194450/http://www.samsung.com/us/mobile/cell-phones/SM-G730VMBAVZW
259	SM-G750ANKAATT-Galaxy Mega™ 2	http://web.archive.org/web/20141230193737/http://www.samsung.com/us/mobile/cell-phones/SM-G750ANKAATT
260	SM-G850AZDEATT-Galaxy Alpha®	http://web.archive.org/web/20141001061559/http://www.samsung.com/us/mobile/cell-phones/SM-G850AZDEATT
261	SM-G850AZKEATT- Galaxy Alpha®	http://web.archive.org/web/20141230193842/http://www.samsung.com/us/mobile/cell-phones/SM-G850AZKEATT
262	SM-G850AZWEATT-Galaxy Alpha®	http://web.archive.org/web/20141230193822/http://www.samsung.com/us/mobile/cell-phones/SM-G850AZWEATT
263	SM-G870ARREATT-Galaxy S® 5	http://web.archive.org/web/20141230193926/http://www.samsung.com/us/mobile/cell-phones/SM-G870ARREATT
264	SM-G900AZKAATT-Galaxy S® 5	http://web.archive.org/web/20140531213352/http://www.samsung.com/us/mobile/cell-phones/SM-G900AZKAATT
265	SM-G900AZWAATT-Galaxy S® 5	http://web.archive.org/web/20141230192555/http://www.samsung.com/us/mobile/cell-phones/SM-G900AZWAATT
266	SM-G900PZKASPR-Galaxy S® 5	http://web.archive.org/web/20141230192623/http://www.samsung.com/us/mobile/cell-phones/SM-G900PZKASPR
267	SM-G900PZWABST-Galaxy S® 5	http://web.archive.org/web/20140531213922/http://www.samsung.com/us/mobile/cell-phones/SM-G900PZWABST
268	SM-G900PZWAVMU-Galaxy S® 5	http://web.archive.org/web/20140531213907/http://www.samsung.com/us/mobile/cell-phones/SM-G900PZWAVMU
269	SM-G900RZKAUSC-Galaxy S® 5	http://web.archive.org/web/20141001060828/http://www.samsung.com/us/mobile/cell-phones/SM-G900RZKAUSC

270	SM-G900TRKATMB-Galaxy S® 5	http://web.archive.org/web/20140531213435/http://www.samsung.com/us/mobile/cell-phones/SM-G900TRKATMB
271	SM-G900TZKATMB-Galaxy S® 5	http://web.archive.org/web/20140531213339/http://www.samsung.com/us/mobile/cell-phones/SM-G900TZKATMB
272	SM-G900VZKAVZW-Galaxy S® 5	http://web.archive.org/web/20141230192534/http://www.samsung.com/us/mobile/cell-phones/SM-G900VZKAVZW
273	Smiley :) QWERTY	http://web.archive.org/web/20140301012541/http://www.samsung.com/us/mobile/cell-phones/SGH-T359FBATMB
274	SM-N900AZKEATT-Note® 3	http://web.archive.org/web/20141230193946/http://www.samsung.com/us/mobile/cell-phones/SM-N900AZKEATT
275	SM-N900PZKESPR-Galaxy Note® 3	http://web.archive.org/web/20141230194709/http://www.samsung.com/us/mobile/cell-phones/SM-N900PZKESPR
276	SM-N900RZKEUSC-Galaxy Note® 3	http://web.archive.org/web/20141001063838/http://www.samsung.com/us/mobile/cell-phones/SM-N900RZKEUSC
277	SM-N900VWDEVZW-Galaxy Note® 3	http://web.archive.org/web/20141230194241/http://www.samsung.com/us/mobile/cell-phones/SM-N900VWDEVZW
278	SM-N900VZKEVZW-Galaxy Note® 3	http://web.archive.org/web/20141230194306/http://www.samsung.com/us/mobile/cell-phones/SM-N900VZKEVZW
279	SM-N910AZKEATT-Galaxy Note® 4	http://web.archive.org/web/20141230185452/http://www.samsung.com/us/mobile/cell-phones/SM-N910AZKEATT
280	SM-N910PZKESPR-Galaxy Note® 4	http://web.archive.org/web/20141230194643/http://www.samsung.com/us/mobile/cell-phones/SM-N910PZKESPR
281	SM-N910RZKEUSC - Galaxy Note® 4	http://web.archive.org/web/20141001060558/http://www.samsung.com/us/mobile/cell-phones/SM-N910RZKEUSC
282	SM-N910VZKEVZW-Note® 4	http://web.archive.org/web/20141230194214/http://www.samsung.com/us/mobile/cell-phones/SM-N910VZKEVZW
283	SM-N915AZKEATT-Galaxy Note® Edge	http://web.archive.org/web/20141230193706/http://www.samsung.com/us/mobile/cell-phones/SM-N915AZKEATT
284	SM-N915PZKESPR-Galaxy Note® Edge	http://web.archive.org/web/20141230194617/http://www.samsung.com/us/mobile/cell-phones/SM-N915PZKESPR
285	SM-N915VZKEVZW-Note® Edge	http://web.archive.org/web/20141230194151/http://www.samsung.com/us/mobile/cell-phones/SM-N915VZKEVZW
286	Smooth (SCH-u350)	https://web.archive.org/web/20100211025202/http://www.samsung.com:80/us/consumer/mobile/mobile-

		phones/verizon-wireless-phones/SCH-U350MBAVZW/index.idx?pagetype=prd_detail&returnurl=
287	SM-P6000ZWVXAR-Galaxy Note® 10.1	http://web.archive.org/web/20141230203655/http://www.samsung.com/us/mobile/galaxy-tab/SM-P6000ZWVXAR
288	SM-P6000ZWYXAR-Galaxy Note® 10.1	http://web.archive.org/web/20140531225041/http://www.samsung.com/us/mobile/galaxy-tab/SM-P6000ZWYXAR
289	SM-P605VZKEVZW-Galaxy Note® 10.1	http://web.archive.org/web/20140531225216/http://www.samsung.com/us/mobile/galaxy-tab/SM-P605VZKEVZW
290	SM-P9000ZWVXAR-Galaxy Note® Pro 12.2	http://web.archive.org/web/20141230185651/http://www.samsung.com/us/mobile/galaxy-tab/SM-P9000ZWVXAR
291	SM-P905VZKAVZW-Galaxy Note® Pro 12.2	http://web.archive.org/web/20140531204138/http://www.samsung.com/us/mobile/galaxy-tab/SM-P905VZKAVZW
292	SM-R130NZKSXAR-Gear™ Circle	http://web.archive.org/web/20141230185515/http://www.samsung.com/us/mobile/wearable-tech/SM-R130NZKSXAR
293	SM-R3800MOAXAR-Gear™ 2	http://web.archive.org/web/20141230204003/http://www.samsung.com/us/mobile/wearable-tech/SM-R3800MOAXAR
294	SM-R3800VSAXAR-Gear™ 2	http://web.archive.org/web/20141230203917/http://www.samsung.com/us/mobile/wearable-tech/SM-R3800VSAXAR
295	SM-R3810ZAAXAR-Gear™ 2 Neo	http://web.archive.org/web/20141230204036/http://www.samsung.com/us/mobile/wearable-tech/SM-R3810ZAAXAR
296	SM-R3810ZKAXAR-Gear™ 2 Neo	http://web.archive.org/web/20141230204011/http://www.samsung.com/us/mobile/wearable-tech/SM-R3810ZKAXAR
297	SM-R3810ZOAXAR-Gear™ 2 Neo	http://web.archive.org/web/20141230204050/http://www.samsung.com/us/mobile/wearable-tech/SM-R3810ZOAXAR
298	SM-R3820WRAXAR-Gear™ Live	http://web.archive.org/web/20141230204340/http://www.samsung.com/us/mobile/wearable-tech/SM-R3820WRAXAR
299	SM-R750AZWAATT-Gear S™	http://web.archive.org/web/20141230204233/http://www.samsung.com/us/mobile/wearable-tech/SM-R750AZWAATT
300	SM-R750PZKASPR-Gear S™	http://web.archive.org/web/20141230204136/http://www.samsung.com/us/mobile/wearable-tech/SM-R750PZKASPR
301	SM-R750TZKATMB-Gear S™	http://web.archive.org/web/20141230204201/http://www.samsung.com/us/mobile/wearable-tech/SM-R750TZKATMB
302	SM-R750VZWAVZW- Gear S™	http://web.archive.org/web/20141230204216/http://www.samsung.com/us/mobile/wearable-tech/SM-R750VZWAVZW

303	SM-S890LZKATFN-Galaxy S@ 4 Mini	http://web.archive.org/web/20140531221946/http://www.samsung.com/us/mobile/cell-phones/SM-S890LZKATFN
304	SM-T110NDWAXAR-Galaxy Tab@ 3 Lite 7.0	http://web.archive.org/web/20141230203535/http://www.samsung.com/us/mobile/galaxy-tab/SM-T110NDWAXAR
305	SM-T2105GYAXAR-Galaxy Tab@ 3 7.0 Kids	http://web.archive.org/web/20141230203609/http://www.samsung.com/us/mobile/galaxy-tab/SM-T2105GYAXAR
306	SM-T2105GYXXAR-Galaxy Tab@ 3 7.0 Kids	http://web.archive.org/web/20141230185616/http://www.samsung.com/us/mobile/galaxy-tab/SM-T2105GYXXAR
307	SM-T210RZWYXAR-Galaxy Tab@ 3 7.0	http://web.archive.org/web/20130809092241/http://www.samsung.com/us/mobile/galaxy-tab/SM-T210RZWYXAR
308	SM-T230NZWAXAR-Galaxy Tab@ 4 7.0	http://web.archive.org/web/20141230203353/http://www.samsung.com/us/mobile/galaxy-tab/SM-T230NZWAXAR
309	SM-T230NZWUBNN-Galaxy Tab@ 4 NOOK@ 7"	http://web.archive.org/web/20141230203332/http://www.samsung.com/us/mobile/galaxy-tab/SM-T230NZWUBNN
310	SM-T3100ZWYXAR-Galaxy Tab@ 3 8.0	http://web.archive.org/web/20130809185314/http://www.samsung.com/us/mobile/galaxy-tab/SM-T3100ZWYXAR
311	SM-T330NZWAXAR-Galaxy Tab@ 4 8.0	http://web.archive.org/web/20141230203413/http://www.samsung.com/us/mobile/galaxy-tab/SM-T330NZWAXAR
312	SM-T530NYKUBNN-Galaxy Tab@ 4 NOOK@	http://web.archive.org/web/20141230203313/http://www.samsung.com/us/mobile/galaxy-tab/SM-T530NYKUBNN
313	SM-T530NZWAXAR-Galaxy Tab@ 4 10.1	http://web.archive.org/web/20141230203435/http://www.samsung.com/us/mobile/galaxy-tab/SM-T530NZWAXAR
314	SM-T800NZWAXAR-Galaxy Tab@ S 10.5"	http://web.archive.org/web/20141230192342/http://www.samsung.com/us/mobile/galaxy-tab/SM-T800NZWAXAR
315	SM-T807RTSAUSC-Galaxy Tab S 10.5	http://web.archive.org/web/20141230203804/http://www.samsung.com/us/mobile/galaxy-tab/SM-T807RTSAUSC
316	SM-T807RZWAUSC-Galaxy Tab S 10.5	http://web.archive.org/web/20141230203826/http://www.samsung.com/us/mobile/galaxy-tab/SM-T807RZWAUSC
317	SM-T807TTSATMB-Galaxy Tab@ S 10.5	http://web.archive.org/web/20141230203744/http://www.samsung.com/us/mobile/galaxy-tab/SM-T807TTSATMB
318	SM-T9000ZWAXAR-Galaxy Tab@ Pro 12.2	http://web.archive.org/web/20141230203456/http://www.samsung.com/us/mobile/galaxy-tab/SM-T9000ZWAXAR

319	SMT-I3105	http://web.archive.org/web/20150228005038/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/SMT-I3105N/XAR
320	SMT-I3105N/XAR-IP Phone SMT-I3105	http://web.archive.org/web/20141012012738/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I3105N/XAR
321	SMT-I5210	http://web.archive.org/web/20150407162454/http://www.samsung.com/us/business/business-communication-systems/smb-communication-solutions/SMT-I5210N/XAR
322	SMT-I5210N/XAR-IP Phone SMT-I5210	http://web.archive.org/web/20131129202047/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I5210N/XAR
323	SMT-I5230	http://web.archive.org/web/20150210204534/http://www.samsung.com/us/business/business-communication-systems/smb-communication-solutions/SMT-I5230N/XAR
324	SMT-I5230N/XAR-IP Phone SMT-I5230	http://web.archive.org/web/20131201010833/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I5230N/XAR
325	SMT-I5243N/XAR-IP Phone SMT-I5243	http://web.archive.org/web/20131201040007/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I5243N/XAR
326	SMT-I5264	http://web.archive.org/web/20150407162324/http://www.samsung.com/us/business/business-communication-systems/smb-communication-solutions/SMT-I5264W/XAR
327	SMT-I5264W/XAR-IP add-on module SMT-I5264	http://web.archive.org/web/20140328122005/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/SMT-I5264W/XAR
328	SMT-W5120D	http://web.archive.org/web/20141012005338/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/SMT-W5120D/XAR
329	SM-V100TZKATMB-LTE Mobile HotSpot PRO	http://web.archive.org/web/20140531220628/http://www.samsung.com/us/mobile/cell-phones/SM-V100TZKATMB
330	SM-W750VMSAVZW-ATIV SE™	http://web.archive.org/web/20140531215235/http://www.samsung.com/us/mobile/cell-phones/SM-W750VMSAVZW

331	SPH-a420	https://web.archive.org/web/20090204060739/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A420TAASPR
332	SPH-a500	https://web.archive.org/web/20080925222439/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A500ISSXAR
333	SPH-a580	https://web.archive.org/web/20080113045445/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A580ZKASPR
334	SPH-a600	https://web.archive.org/web/20071025005045/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A600ZSSXAR
335	SPH-a640	https://web.archive.org/web/20080922123147/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A640ZKASPR
336	SPH-a680 (VM-A680)	https://web.archive.org/web/20071025005055/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A680SSSXAR
337	SPH-a700 (MM-A700)	https://web.archive.org/web/20080922182247/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A700BSSXAR
338	SPH-a740 (PM-A740)	https://web.archive.org/web/20071224210111/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A740DSSXAR
339	SPH-a760 (RL-A760)	https://web.archive.org/web/20080224180456/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A760RLASPR

		lephones&type=mobilephones&subtype=sprint&model_cd=SPH-A760DSSXAR
340	SPH-a790 (IP-A790)	https://web.archive.org/web/20080116032253/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A790ZKSXAR
341	SPH-a800 (MM-A800)	https://web.archive.org/web/20080922141859/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A800ISSXAR
342	SPH-a820 (MM-A820)	https://web.archive.org/web/20080402232212/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A820ZGSXAR
343	SPH-a840 (PM-a840)	https://web.archive.org/web/20080922200135/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A840BKSXAR
344	SPH-a880 (PM-A880)	https://web.archive.org/web/20080118085812/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A880TSSXAR
345	SPH-a900	https://web.archive.org/web/20090204171545/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A900ZKSXAR
346	SPH-a920 (MM-A920)	https://web.archive.org/web/20080917062746/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A920WSSXAR
347	SPH-a940 (MM-A940)	https://web.archive.org/web/20080117061057/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A940LSSXAR

348	SPH-a960 (MM-A960)	https://web.archive.org/web/20080917062752/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-A960TSSXAR
349	SPH-i500	https://web.archive.org/web/20071031142105/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-I500SS/XAR
350	SPH-i600 (SP-I600)	https://web.archive.org/web/20080926020146/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-I600MSSXAR
351	SPH-L300ZSASPR-Galaxy Victory™ 4G LTE	http://web.archive.org/web/20140531220234/http://www.samsung.com/us/mobile/cell-phones/SPH-L300ZSASPR
352	SPH-L520ZKPSPR-Galaxy S® 4 Mini	http://web.archive.org/web/20141230193105/http://www.samsung.com/us/mobile/cell-phones/SPH-L520ZKPSPR
353	SPH-L700ZKASPR-Galaxy Nexus™	http://web.archive.org/web/20141230195027/http://www.samsung.com/us/mobile/cell-phones/SPH-L700ZKASPR
354	SPH-L710MBBSPR-Galaxy S® III	http://web.archive.org/web/20141230194934/http://www.samsung.com/us/mobile/cell-phones/SPH-L710MBBSPR
355	SPH-L710RWPSPR-Galaxy S® III	http://web.archive.org/web/20141230193156/http://www.samsung.com/us/mobile/cell-phones/SPH-L710RWPSPR
356	SPH-L720- Galaxy S® 4	http://web.archive.org/web/20130904040757/http://www.samsung.com:80/us/mobile/cell-phones/SPH-L720ZPASPR
357	SPH-L720ZBASPR-Galaxy S® 4	http://web.archive.org/web/20141230194731/http://www.samsung.com/us/mobile/cell-phones/SPH-L720ZBASPR
358	SPH-L720ZPASPR-Galaxy S® 4	http://web.archive.org/web/20141230194808/http://www.samsung.com/us/mobile/cell-phones/SPH-L720ZPASPR
359	SPH-L900-Galaxy Note® II	http://web.archive.org/web/20130206022805/http://www.samsung.com/us/mobile/cell-phones/SPH-L900TSASPR
360	SPH-L900TSASPR-Galaxy Note® II	http://web.archive.org/web/20141230194909/http://www.samsung.com/us/mobile/cell-phones/SPH-L900TSASPR
361	SPH-m220	https://web.archive.org/web/20090129094639/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M220

		lephones&type=mobilephones&subtype=sprint&model_cd=SPH-M220DAASPR
362	SPH-m300	https://web.archive.org/web/20090204024559/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M300ISASPR
363	SPH-m320	https://web.archive.org/web/20090204003427/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M320ZSASPR
364	SPH-M350	http://web.archive.org/web/20111211013604/http://www.samsung.com:80/us/mobile/cell-phones/SPH-M350ZKASPR
365	SPH-M360	http://web.archive.org/web/20111222083826/http://www.samsung.com:80/us/mobile/cell-phones/SPH-M360ZBAXAR
366	SPH-M380	http://web.archive.org/web/20111214203358/http://www.samsung.com:80/us/mobile/cell-phones/SPH-M380ZKASPR
367	SPH-M390ZSASPR-Array™	http://web.archive.org/web/20141230195052/http://www.samsung.com/us/mobile/cell-phones/SPH-M390ZSASPR
368	SPH-M400MSASPR	http://web.archive.org/web/20141230195002/http://www.samsung.com/us/mobile/cell-phones/SPH-M400MSASPR
369	SPH-m500	https://web.archive.org/web/20090204060703/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M500BKASPR
370	SPH-m510	https://web.archive.org/web/20090204024544/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M510BKASPR
371	SPH-m520	https://web.archive.org/web/20090129120807/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M520ZSASPR
372	SPH-M570	http://web.archive.org/web/20111210231057/http://www.samsung.com:80/us/mobile/cell-phones/SPH-M570ZKASPR

373	SPH-m610	https://web.archive.org/web/20090203181307/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M610DAASPR
374	SPH-n200	https://web.archive.org/web/20080115152552/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-N200SS/XAR
375	SPH-n240	https://web.archive.org/web/20071201205723/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-N240SS/XAR
376	SPH-n400	https://web.archive.org/web/20080113061017/http://www.samsung.com:80/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-N400ISSXAR
377	SPH-P100-Galaxy Tab™ 7.0"	https://web.archive.org/web/20120531055913/http://www.samsung.com/us/mobile/galaxy-tab/SPH-P100ZKASPR
378	SPH-z400	https://web.archive.org/web/20090204004127/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-Z400DAASPR
379	Stratosphere - SCH-I405	http://web.archive.org/web/20120215041631/http://www.samsung.com:80/us/mobile/cell-phones/SCH-I405LKAVZW
380	Sunburst Touchscreen - SGH-A697	http://web.archive.org/web/20120107212438/http://www.samsung.com:80/us/mobile/cell-phones/SGH-A697ZKAATT
381	Sway™ (SCH-u650)	https://web.archive.org/web/20100211042351/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-U650PSAVZW/index.idx?pagetype=prd_detail&returnurl=
382	t159	http://web.archive.org/web/20140301012417/http://www.samsung.com/us/mobile/cell-phones/SGH-T159YKBTMB
383	t404 (TracFone)	http://web.archive.org/web/20120101180503/http://www.samsung.com:80/us/mobile/cell-phones/SGH-T404ZKATFN

385	Touch QWERTY Cell Phone	http://web.archive.org/web/20140301012509/http://www.samsung.com/us/mobile/cell-phones/SGH-T669ARBTMB
386	Trance (SCH-u490)	https://web.archive.org/web/20100211025207/http://www.samsung.com:80/us/consumer/mobile/mobile-phones/verizon-wireless-phones/SCH-U490ZRAVZW/index.idx?pagetype=prd_detail&returnurl=
387	Transform™ QWERTY -SPH-M920	http://web.archive.org/web/20111212113020/http://www.samsung.com:80/us/mobile/cell-phones/SPH-M920ZKASPR
388	UMPC I (SPH-P9200)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=161
389	UMPC II (NT-Q1 Ultra)	https://web.archive.org/web/20081206005643/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=16&b2b_prd_id=162
390	UpStage (SPH-m620)	https://web.archive.org/web/20090204025029/http://www.samsung.com/us/consumer/detail/detail.do?group=mobilephones&type=mobilephones&subtype=sprint&model_cd=SPH-M620ZKASPR
391	XE303C12-H01US-Chromebook 3G	http://web.archive.org/web/20130901182241/http://www.samsung.com/us/computer/chrome-os-devices/XE303C12-H01US
392	XE500C21-Chromebook Series 5	http://web.archive.org/web/20120430032859/http://www.samsung.com:80/us/computer/chromebook/XE500C21-H04US
393	XE700T1A-Series 7 11.6	http://web.archive.org/web/20120426065235/http://www.samsung.com:80/us/business/tablet-pcs/XE700T1A-A04US
394	XE700T1A-Series 7 11.6" Business Slate	http://web.archive.org/web/20120427042618/http://www.samsung.com:80/us/business/tablet-pcs/XE700T1A-A05US
395	YP-G1CWY-Galaxy Player 4.0	http://web.archive.org/web/20120428234451/http://www.samsung.com:80/us/mobile/mp3-players/YP-G1CWY/XAA
396	YP-G70C/NAW-Galaxy Player 5.0	http://web.archive.org/web/20120428235529/http://www.samsung.com:80/us/mobile/mp3-players/YP-G70CWY/XAA
397	YP-GS1CB-Galaxy Player 3.6	http://web.archive.org/web/20120501155450/http://www.samsung.com:80/us/mobile/mp3-players/YP-GS1CB/XAA

and/or the like.

Exhibit C

WIRELESS NETWORK CONTROL SYSTEMS & COMPONENTS

A wireless network control system and components, such as, with one or more of such

1	IES-4028FP	http://web.archive.org/web/20141103062931/http://www.samsung.com/us/business/business-communication-systems/smb-communication-solutions/IES-4028FP/XAR
2	LTE Serving and Packet Gateways (S-GW/P-GW)	http://www.samsung.com/global/business/networks/core-network/core-network/mobile-packet-core
3	Network Functions Virtualization (NFV)	http://www.samsung.com/global/business/networks/core-network/core-network/virtualized-epc
4	<u>0609-001222</u>	https://www.chicagotech.com/products/samsung/gbe/
5	14 SLT BASIC SHELF	https://www.chicagotech.com/products/samsung/basic/

6	2 PRT GBE PROTN MOD	https://www.chicagotech.com/products/samsung/gbe/
7	2014.02.Samsung.lte B4G Standardization	https://www.scribd.com/document/231483897/2014-02-Samsung-lte-B4G-Standardization
8	2G/3G Gateway GPRS Support Node (GGSN)	http://www.samsung.com/global/business/networks/core-network/core-network/mobile-packet-core
9	2G/3G Serving GPRS Support Node (SGSN)	http://www.samsung.com/global/business/networks/core-network/core-network/mobile-packet-core
10	8 PRT GBE PCKT ENG	https://www.chicagotech.com/products/samsung/gbe/
11	Access Point WEA302	http://web.archive.org/web/20130930045453/http://www.samsung.com:80/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A302CI/XAR
12	ACEMAP 21 SLOT CHASSIS	https://www.chicagotech.com/products/samsung/acemap/
13	ACEMAP ADSL FAC CARD	https://www.chicagotech.com/products/samsung/acemap/
14	ACEMAP ADSL TRMSN UNIT	https://www.chicagotech.com/products/samsung/acemap/
15	ACEMAP AIR FILTER	https://www.chicagotech.com/products/samsung/acemap/
16	ACEMAP DS3 INTFC	https://www.chicagotech.com/products/samsung/acemap/
17	ACEMAP DS3 NET INTFC	https://www.chicagotech.com/products/samsung/acemap/
18	ACEMAP DS3 SUBTNG INTF	https://www.chicagotech.com/products/samsung/acemap/
19	ACEMAP FAN UNIT	https://www.chicagotech.com/products/samsung/acemap/

20	ACEMAP FILLER BLANK	https://www.chicagotech.com/products/samsung/acemap/
21	ACEMAP MA CONT INTFC	https://www.chicagotech.com/products/samsung/acemap/
22	ACEMAP MA CONT UNIT	https://www.chicagotech.com/products/samsung/acemap/
23	ACEMAP NET INTFC W/CLK	https://www.chicagotech.com/products/samsung/acemap/
24	ACEMAP OC-3C NET INTFC	https://www.chicagotech.com/products/samsung/acemap/
25	ACEMAP OC-3C SUBTNG	https://www.chicagotech.com/products/samsung/acemap/
26	ACEMAP PWR DISTR PANEL	https://www.chicagotech.com/products/samsung/acemap/
27	ACEMAP SHDSL FAC CARD	https://www.chicagotech.com/products/samsung/acemap/
28	ACEMAP SHDSL TRMSN UN	https://www.chicagotech.com/products/samsung/acemap/
29	ACEMAP T1 IMA FAC CD	https://www.chicagotech.com/products/samsung/acemap/
30	ACEMAP T1 IMA SUBTNG	https://www.chicagotech.com/products/samsung/acemap/
31	ACEMAP T1 NET INTFC	https://www.chicagotech.com/products/samsung/acemap/
32	ACEMAP TST CONN CARD	https://www.chicagotech.com/products/samsung/acemap/
33	ACEMAP TST FUNC CARD	https://www.chicagotech.com/products/samsung/acemap/
34	AirEqualizer	http://www.samsung.com/us/business/by-business-size/enterprise-solutions/samsung-wlan-solution

35	AirEqualizer , AirMove, Voice Aware Traffic Scheduling	http://www.samsung.com/us/business/by-business-size/enterprise-solutions/samsung-wlan-solution
36	ALM GATHERING BD	https://www.chicagotech.com/products/samsung/alm/
37	ALM GATHERNG-GBG PRNCD	https://www.chicagotech.com/products/samsung/alm/
38	ALM-ETHNT PRNCD	https://www.chicagotech.com/products/samsung/alm/
39	ATM CELL MUX CARD	https://www.chicagotech.com/products/samsung/atm/
40	ATM SIG BD	https://www.chicagotech.com/products/samsung/atm/
41	ATM SIG NODE ASBY	https://www.chicagotech.com/products/samsung/atm/
42	ATM SW & FABRIC CD	https://www.chicagotech.com/products/samsung/atm/
43	Automatic Neighbor Relation	http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/
44	BASIC RACK	https://www.chicagotech.com/products/samsung/basic/
45	BLANK FILLER	https://www.chicagotech.com/products/samsung/blank/
46	BLANK PBA STIFFENER	https://www.chicagotech.com/products/samsung/blank/
47	CDMA UbiCell	https://web.archive.org/web/20120320145313/http://www.samsung.com/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=20&b2b_prd_id=201

48	CDMA UbiCell™	http://web.archive.org/web/20120320145313/http://www.samsung.com/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=20&b2b_prd_id=201
49	Centralized-RAN (C-RAN2.0)	http://www.samsung.com/global/business/networks/solutions/solutions/centralized-ran
50	CLOCK DISTN CARD	https://www.chicagotech.com/products/samsung/loc/
51	Cloud & NFV (AdaptiV)	http://www.samsung.com/global/business/networks/solutions/solutions/cloud-nfv
52	CognitiV Analytics	
53	CognitiV Cloud Manager System	http://www.samsung.com/global/business/networks/solutions/solutions/cloud-nfv
54	Communication Manager IPX-S500	http://web.archive.org/web/20131003110241/http://www.samsung.com:80/us/business/business-communication-systems/wireless-enterprise-solutions/IPX-S500/XAR
55	COMPACT 3U AUX RK ASBY	https://www.chicagotech.com/products/samsung/compact/
56	COMPACT OUTDOOR BKBD	https://www.chicagotech.com/products/samsung/compact/
57	COMPACT OUTDOOR RACK	https://www.chicagotech.com/products/samsung/compact/
58	COMPACT RACK ASBY	https://www.chicagotech.com/products/samsung/compact/
59	DAB COMB & DIGL INTFC	https://www.chicagotech.com/products/samsung/dab/
60	DATA PROCESSING BD	https://www.chicagotech.com/products/samsung/data/
61	DATA PROCESSING CARD	https://www.chicagotech.com/products/samsung/data/
62	DCU Samsung	https://www.scribd.com/doc/68949171/DCU-Samsung

63	Deep Packet Inspection (DPI)	http://www.samsung.com/global/business/networks/core-network/core-network/mobile-packet-core
64	Digital Unit (or Baseband Unit)	http://www.samsung.com/global/business/networks/single-ran/single-ran/multi-standard-base-station
65	Dynamic Power Amplifier	http://www.samsung.com/global/business/networks/radio-access/radio-access/radio-unit
66	EJ75-00496A	https://www.chicagotech.com/products/samsung/acemap/
67	EJ75-00497A	https://www.chicagotech.com/products/samsung/acemap/
68	EJ75-00626A	https://www.chicagotech.com/products/samsung/blank/
69	EJ92-01493E	https://www.chicagotech.com/products/samsung/acemap/
70	EJ92-01498C	https://www.chicagotech.com/products/samsung/acemap/
71	EJ92-01502A	https://www.chicagotech.com/products/samsung/acemap/
72	EJ92-01529C	https://www.chicagotech.com/products/samsung/acemap/
73	EJ92-01597A	https://www.chicagotech.com/products/samsung/acemap/
74	EJ92-01615C	https://www.chicagotech.com/products/samsung/acemap/
75	EJ92-01619C	https://www.chicagotech.com/products/samsung/acemap/
76	EJ92-01621B	https://www.chicagotech.com/products/samsung/acemap/
77	EJ92-01629E	https://www.chicagotech.com/products/samsung/acemap/
78	EJ92-01640G	https://www.chicagotech.com/products/samsung/acemap/
79	EJ92-01651A	https://www.chicagotech.com/products/samsung/acemap/
80	EJ92-01657A	https://www.chicagotech.com/products/samsung/acemap/
81	EJ92-01698A	https://www.chicagotech.com/products/samsung/acemap/
82	EJ92-01706B	https://www.chicagotech.com/products/samsung/acemap/
83	EJ92-01707B	https://www.chicagotech.com/products/samsung/acemap/
84	EJ92-01710A	https://www.chicagotech.com/products/samsung/acemap/
85	EJ92-01712A	https://www.chicagotech.com/products/samsung/acemap/
86	EJ92-01715A	https://www.chicagotech.com/products/samsung/acemap/
87	EJ96-02106A	https://www.chicagotech.com/products/samsung/acemap/

88	<u>EJ96-02107A</u>	https://www.chicagotech.com/products/samsung/acemap/
89	<u>EJ96-02108A</u>	https://www.chicagotech.com/products/samsung/acemap/
90	<u>EJ96-02115B</u>	https://www.chicagotech.com/products/samsung/acemap/
91	<u>EJ96-02116A</u>	https://www.chicagotech.com/products/samsung/acemap/
92	<u>EJ96-02117A</u>	https://www.chicagotech.com/products/samsung/acemap/
93	<u>EJ96-02121A</u>	https://www.chicagotech.com/products/samsung/acemap/
94	<u>EJ96-02267A</u>	https://www.chicagotech.com/products/samsung/sys/
95	<u>EJ96-02391A</u>	https://www.chicagotech.com/products/samsung/blank/
96	<u>EJ96-02495A</u>	https://www.chicagotech.com/products/samsung/data/
97	<u>EJ96-02500A</u>	https://www.chicagotech.com/products/samsung/basic/
98	<u>EJ96-02501A</u>	https://www.chicagotech.com/products/samsung/basic/
99	<u>EJ96-02503A</u>	https://www.chicagotech.com/products/samsung/basic/
100	<u>EJ96-02517A</u>	https://www.chicagotech.com/products/samsung/sys/
101	ELEM MGMT SYS SRVR OEM	https://www.chicagotech.com/products/samsung/sys/

102	<u>EN91-00591</u>	https://www.chicagotech.com/products/samsung/basic/
103	Enterprise WiFi Access Points (AP)	http://www.samsung.com/global/business/networks/solutions/solutions/in-building-solutions/
104	<u>EP59-00403A</u>	https://www.chicagotech.com/products/samsung/sys/
105	<u>EP75-00532A</u>	https://www.chicagotech.com/products/samsung/blank/
106	<u>EP75-00533A</u>	https://www.chicagotech.com/products/samsung/blank/
107	<u>EP92-00782F</u>	https://www.chicagotech.com/products/samsung/atm/
108	<u>EP92-00907B</u>	https://www.chicagotech.com/products/samsung/loc/
109	<u>EP92-00976A</u>	https://www.chicagotech.com/products/samsung/atm/
110	<u>EP92-00977A</u>	https://www.chicagotech.com/products/samsung/alm/
111	<u>EP92-00981A</u>	https://www.chicagotech.com/products/samsung/univ/
112	<u>EP92-00982A</u>	https://www.chicagotech.com/products/samsung/univ/
113	<u>EP92-00986A</u>	https://www.chicagotech.com/products/samsung/univ/
114	<u>EP92-00999B</u>	https://www.chicagotech.com/products/samsung/univ/

115	<u>EP92-01038A</u>	https://www.chicagotech.com/products/samsung/univ/
116	<u>EP92-01044A</u>	https://www.chicagotech.com/products/samsung/univ/
117	<u>EP92-01045B</u>	https://www.chicagotech.com/products/samsung/univ/
118	<u>EP92-01047A</u>	https://www.chicagotech.com/products/samsung/univ/
119	<u>EP92-01097A</u>	https://www.chicagotech.com/products/samsung/univ/
120	<u>EP92-01106A</u>	https://www.chicagotech.com/products/samsung/univ/
121	<u>EP92-01107A</u>	https://www.chicagotech.com/products/samsung/univ/
122	<u>EP92-01108A</u>	https://www.chicagotech.com/products/samsung/univ/
123	<u>EP92-01180A</u>	https://www.chicagotech.com/products/samsung/univ/
124	<u>EP92-01204C</u>	https://www.chicagotech.com/products/samsung/univ/

125	<u>EP92-01359</u>	https://www.chicagotech.com/products/samsung/premium/
126	<u>EP92-01408A</u>	https://www.chicagotech.com/products/samsung/subr/
127	<u>EP92-01408B</u>	https://www.chicagotech.com/products/samsung/subr/
128	<u>EP92-01415A</u>	https://www.chicagotech.com/products/samsung/gbe/
129	<u>EP92-01424</u>	https://www.chicagotech.com/products/samsung/compact/
130	<u>EP96-01699A</u>	https://www.chicagotech.com/products/samsung/univ/
131	<u>EP96-01739A</u>	https://www.chicagotech.com/products/samsung/univ/
132	<u>EP96-01740A</u>	https://www.chicagotech.com/products/samsung/univ/
133	<u>EP96-01741A</u>	https://www.chicagotech.com/products/samsung/univ/
134	<u>EP96-01818A</u>	https://www.chicagotech.com/products/samsung/dab/
135	<u>EP96-01818B</u>	https://www.chicagotech.com/products/samsung/dab/
136	<u>EP96-01819A</u>	https://www.chicagotech.com/products/samsung/dab/
137	<u>EP96-01819B</u>	https://www.chicagotech.com/products/samsung/dab/
138	<u>EP96-01975A</u>	https://www.chicagotech.com/products/samsung/sys/
139	<u>EP96-02037A</u>	https://www.chicagotech.com/products/samsung/pckt/
140	<u>EP96-02085B</u>	https://www.chicagotech.com/products/samsung/gbe/

141	<u>EP96-02113C</u>	https://www.chicagotech.com/products/samsung/loc/
142	<u>EP96-02117A</u>	https://www.chicagotech.com/products/samsung/pckt/
143	<u>EP96-02118A</u>	https://www.chicagotech.com/products/samsung/pckt/
144	<u>EP96-02119A</u>	https://www.chicagotech.com/products/samsung/pckt/
145	<u>EP96-02120A</u>	https://www.chicagotech.com/products/samsung/pckt/
146	<u>EP96-02121A</u>	https://www.chicagotech.com/products/samsung/pckt/
147	<u>EP96-02122A</u>	https://www.chicagotech.com/products/samsung/pckt/
148	<u>EP96-02233A</u>	https://www.chicagotech.com/products/samsung/blank/
149	<u>EP96-02295B</u>	https://www.chicagotech.com/products/samsung/sys/
150	<u>EP96-02297B</u>	https://www.chicagotech.com/products/samsung/loc/
151	<u>EP96-02419A</u>	https://www.chicagotech.com/products/samsung/gbe/
152	<u>EP96-02421A</u>	https://www.chicagotech.com/products/samsung/procr/
153	<u>EP96-02422A</u>	https://www.chicagotech.com/products/samsung/gbe/
154	<u>EP96-02423A</u>	https://www.chicagotech.com/products/samsung/gbe/
155	<u>EP96-02424A</u>	https://www.chicagotech.com/products/samsung/gbe/
156	<u>EP96-02425A</u>	https://www.chicagotech.com/products/samsung/alm/
157	<u>EP96-02426A</u>	https://www.chicagotech.com/products/samsung/alm/
158	<u>EP96-02427A</u>	https://www.chicagotech.com/products/samsung/alm/

159	<u>EP96-02428A</u>	https://www.chicagotech.com/products/samsung/alm/
160	<u>EP96-02429A</u>	https://www.chicagotech.com/products/samsung/alm/
161	<u>EP96-02436A</u>	https://www.chicagotech.com/products/samsung/subr/
162	<u>EP96-02436B</u>	https://www.chicagotech.com/products/samsung/subr/
163	<u>EP96-02472A</u>	https://www.chicagotech.com/products/samsung/premium/
164	<u>EP96-02472D</u>	https://www.chicagotech.com/products/samsung/premium/
165	<u>EP96-02499A</u>	https://www.chicagotech.com/products/samsung/compact/
166	<u>EP96-02501A</u>	https://www.chicagotech.com/products/samsung/premium/
167	<u>EP96-02516A</u>	https://www.chicagotech.com/products/samsung/data/
168	<u>EP96-02534</u>	https://www.chicagotech.com/products/samsung/procr/
169	<u>EP96-02595</u>	https://www.chicagotech.com/products/samsung/compact/
170	<u>EP96-02639C</u>	https://www.chicagotech.com/products/samsung/main/
171	<u>EP96-02787B</u>	https://www.chicagotech.com/products/samsung/main/
172	<u>EP96-02836B</u>	https://www.chicagotech.com/products/samsung/main/
173	<u>EP96-03297B</u>	https://www.chicagotech.com/products/samsung/univ/
174	<u>EP96-03441A</u>	https://www.chicagotech.com/products/samsung/loc/
175	<u>EP96-03442A</u>	https://www.chicagotech.com/products/samsung/loc/
176	<u>EP96-03457A</u>	https://www.chicagotech.com/products/samsung/data/
177	<u>EP96-03458A</u>	https://www.chicagotech.com/products/samsung/gbe/
178	<u>EP96-03546A</u>	https://www.chicagotech.com/products/samsung/basic/

179	<u>EQ96-00110A</u>	https://www.chicagotech.com/products/samsung/data/
180	<u>EQ96-00116A</u>	https://www.chicagotech.com/products/samsung/evolved/
181	<u>EQ96-00117A</u>	https://www.chicagotech.com/products/samsung/evolved/
182	<u>EQ96-00133A</u>	https://www.chicagotech.com/products/samsung/evolved/
183	<u>EQ96-00134A</u>	https://www.chicagotech.com/products/samsung/evolved/
184	<u>EQ96-00138A</u>	https://www.chicagotech.com/products/samsung/pckt/
185	<u>EU96-00105A</u>	https://www.chicagotech.com/products/samsung/sys/
186	<u>EU96-00106A</u>	https://www.chicagotech.com/products/samsung/sys/
187	<u>EU96-00126A</u>	https://www.chicagotech.com/products/samsung/atm/
188	<u>EU96-00142A</u>	https://www.chicagotech.com/products/samsung/alm/
189	<u>EU96-00169A</u>	https://www.chicagotech.com/products/samsung/loc/
190	<u>EU96-00171A</u>	https://www.chicagotech.com/products/samsung/atm/
191	<u>EU96-00172A</u>	https://www.chicagotech.com/products/samsung/sys/
192	Evolved Packet Core (EPC)	http://www.samsung.com/global/business/networks/solutions/solutions/in-building-solutions/
193	EVOLVED PACKET CORE RK	https://www.chicagotech.com/products/samsung/evolved/
194	EVOLVED PCKT CORE SHLF	https://www.chicagotech.com/products/samsung/pckt/
195	GBE INTFC PRNCD	https://www.chicagotech.com/products/samsung/gbe/

196	GBE PCKT ENG PRNCD	https://www.chicagotech.com/products/samsung/gbe/
197	GBE SFP TRANSCEIVER	https://www.chicagotech.com/products/samsung/gbe/
198	HDW ALM COLLN CARD	https://www.chicagotech.com/products/samsung/alm/
199	Home/SOHO cell	http://www.samsung.com/global/business/networks/small-cells/small-cells/indoor-small-cells
200	HSPA UbiCell	https://web.archive.org/web/20080606031511/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=11&ctgry_type=20&b2b_prd_id=200
201	iDCS KeySet	https://web.archive.org/web/20080428091934/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=13&ctgry_type=29&b2b_prd_id=120
202	iES4000 Series	http://web.archive.org/web/20120319041525/http://www.samsung.com/global/business/telecommunication/productInfo.do?ctgry_group=13&ctgry_type=27&b2b_prd_id=476
203	IES-4024GP	http://web.archive.org/web/20150403070532/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/IES-4024GP/XAR
204	IMS, eMBMS, virtualized EPC and PTT server.	
205	In-Building Solutions	http://www.samsung.com/global/business/networks/solutions/solutions/in-building-solutions
206	Interference Mitigation Solution (Cluster Controller)	http://www.samsung.com/global/business/networks/solutions/solutions/in-building-solutions/

207	IoT for Public Safety LTE	http://www.samsung.com/global/business/networks/solutions/solutions/iot-solution/
208	IoT Gateway	http://www.samsung.com/global/business/networks/solutions/solutions/iot-solution/
209	IoT Solution	http://www.samsung.com/global/business/networks/solutions/solutions/iot-solution/
210	IP Phone SMT-I5243	http://web.archive.org/web/20130730210017/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/SMT-I5243N/XAR
211	LOC CONT & MGMT BD	https://www.chicagotech.com/products/samsung/loc/
212	LoRaWAN technology	http://www.samsung.com/global/business/networks/solutions/solutions/iot-solution/
213	LTE Mobility Management Entity (MME)	http://www.samsung.com/global/business/networks/core-network/core-network/mobile-packet-core
214	LTE Radio Access Solution	http://www.samsung.com/global/business/networks/solutions/solutions/iot-solution/
215	MAIN CONT/PROCR BOARD	https://www.chicagotech.com/products/samsung/procr/
216	MAIN PROCR,CLK	https://www.chicagotech.com/products/samsung/procr/
217	MAIN RF UNIT 10MHZ ANT	https://www.chicagotech.com/products/samsung/main/
218	Media Gateway (WCDMA)	https://web.archive.org/web/20090124140643/http://www.samsung.com:80/global/business/telecommunication/productType.do?ctgry_group=11&ctgry_type=28
219	Micro cell and Macro cell products	http://www.samsung.com/global/business/networks/small-cells/small-cells/indoor-small-cells
220	Mobile Packet Core	http://www.samsung.com/global/business/networks/core-network/core-network/mobile-packet-core

221	MSAN		https://web.archive.org/web/20081203172645/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=12&ctgry_type=21&b2b_prd_id=171
222	MSBG Router IBG-1000		http://web.archive.org/web/20131006011154/http://www.samsung.com:80/us/business/business-communication-systems/wireless-enterprise-solutions/IBG-1000A/XAR
223	MSBG Router IBG-1003		http://web.archive.org/web/20131007141539/http://www.samsung.com:80/us/business/business-communication-systems/wireless-enterprise-solutions/IBG-1003A4/XAR
224	MSBG Router IBG-2016		http://web.archive.org/web/20131007142759/http://www.samsung.com:80/us/business/business-communication-systems/wireless-enterprise-solutions/IBG-2016A
225	MSBG Router IBG-3026		http://web.archive.org/web/20140118064227/http://www.samsung.com:80/us/business/business-communication-systems/enterprise-ip-phone-solutions/IBG-3026A
226	MSC-Server (WCDMA)		https://web.archive.org/web/20090124134641/http://www.samsung.com:80/global/business/telecommunication/productType.do?ctgry_group=11&ctgry_type=25
227	Multi-Standard Base Station		http://www.samsung.com/global/business/networks/single-ran/single-ran/multi-standard-base-station
228	NB-IoT and LTE-M		http://www.samsung.com/global/business/networks/solutions/solutions/iot-solution/
229	OfficeServ 7030	-	http://web.archive.org/web/20140705173604/http://www.samsung.com:80/us/business/telecommunication/productModel.do?ctgry_type=1&ctgry_subtype=3&b2b_prd_id=490
230	OfficeServ 7100		https://web.archive.org/web/20121212175101/http://www.samsung.com:80/us/business/telecommunication/productModel.do?ctgry_type=1&ctgry_subtype=3&b2b_prd_id=8
231	OfficeServ 7200	-	http://web.archive.org/web/20120609011644/http://www.samsung.com/us/business/telecommunication/productSubType.do?ctgry_type=1&ctgry_subtype=3
232	OfficeServ 7200-S	-	http://web.archive.org/web/20140525221026/http://www.samsung.com:80/us/business/telecommunication/productModel.do?ctgry_type=1&ctgry_subtype=3&b2b_prd_id=491

233	OfficeServ 7400	https://web.archive.org/web/20090124140605/http://www.samsung.com:80/global/business/telecommunication/productInfo.do?ctgry_group=13&ctgry_type=28&b2b_prd_id=42
234	OfficeServ Applications	http://web.archive.org/web/20130801102155/http://www.samsung.com:80/us/business/business-communication-systems/unified-communication-solutions/KP-AP2XWES/XAR
235	PCKT ENG W/COM INTFC	https://www.chicagotech.com/products/samsung/pckt/
236	<u>PEGA-H</u>	https://www.chicagotech.com/products/samsung/gbe/
237	<u>PEGA-M</u>	https://www.chicagotech.com/products/samsung/gbe/
238	P-Gateway and Multi Path TCPGateway	http://www.samsung.com/global/business/networks/solutions/solutions/in-building-solutions/
239	PICOBTS BASIC PMU	https://www.chicagotech.com/products/samsung/basic/
240	PREMIUM 3U RACK ASBY	https://www.chicagotech.com/products/samsung/premium/
241	PREMIUM INDOOR BKBD	https://www.chicagotech.com/products/samsung/premium/
242	PREMIUM RACK ASBY	https://www.chicagotech.com/products/samsung/premium/
243	PRNCD MAIN CONTROL BD	https://www.chicagotech.com/products/samsung/main/
244	PROCR,CLK, 4 PRT GBE	https://www.chicagotech.com/products/samsung/gbe/

245	PROCR,CLK,GBE PRNCD	https://www.chicagotech.com/products/samsung/gbe/
246	RadioTech_30.01.14_ HowardBenn.Samsun g.pdf	https://www.scribd.com/document/293389711/RadioTech-30-01-14-HowardBenn-Samsung-pdf
247	RE BLANK PBA STIFFENER	https://www.chicagotech.com/products/samsung/blank/
248	Router IBG-1000	<a href="http://web.archive.org/web/20150407162912/http://www.samsu
ng.com/us/business/business-communication-systems/wireless-
enterprise-solutions/IBG-1000A/XAR">http://web.archive.org/web/20150407162912/http://www.samsu ng.com/us/business/business-communication-systems/wireless- enterprise-solutions/IBG-1000A/XAR
249	Router IBG-1003	<a href="http://web.archive.org/web/20150407162927/http://www.samsu
ng.com/us/business/business-communication-systems/wireless-
enterprise-solutions/IBG-1003A4/XAR">http://web.archive.org/web/20150407162927/http://www.samsu ng.com/us/business/business-communication-systems/wireless- enterprise-solutions/IBG-1003A4/XAR
250	Router IBG-2016	<a href="http://web.archive.org/web/20150407162921/http://www.samsu
ng.com/us/business/business-communication-systems/wireless-
enterprise-solutions/IBG-2016A">http://web.archive.org/web/20150407162921/http://www.samsu ng.com/us/business/business-communication-systems/wireless- enterprise-solutions/IBG-2016A
251	S30861-Q492-X	http://www.1com.net/category/siemens/
252	S30861-Q493-X	http://www.1com.net/category/siemens/
253	S30861-Q497-X	http://www.1com.net/category/siemens/
254	S30861-Q498-X	http://www.1com.net/category/siemens/
255	S30861-Q499-X	http://www.1com.net/category/siemens/
256	S30861-Q500-X	http://www.1com.net/category/siemens/
257	S30861-Q503-X	http://www.1com.net/category/siemens/
258	S30861-Q504-X	http://www.1com.net/category/siemens/
259	S30861-Q505-X	http://www.1com.net/category/siemens/
260	Samsung 5G Vision 0	<a href="https://www.scribd.com/document/269456317/Samsung-5G-
Vision-0">https://www.scribd.com/document/269456317/Samsung-5G- Vision-0
261	Samsung AirEqualizer	<a href="http://www.samsung.com/us/business/by-business-
size/enterprise-solutions/samsung-wlan-solution">http://www.samsung.com/us/business/by-business- size/enterprise-solutions/samsung-wlan-solution

262	Samsung AirMove uses LTE handover technology	https://web.archive.org/web/20170125202415/http://www.samsung.com/us/business/by-business-size/enterprise-solutions/samsung-enterprise-wifi-advantages
263	Samsung AirMover	http://www.samsung.com/us/business/by-business-size/enterprise-solutions/samsung-wlan-solution
264	Samsung Case Smart VoLTE Solution	https://www.scribd.com/document/156809881/Samsung-Case-Smart-VoLTE-Solution
265	Samsung Communication Manager IPX-S500 for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/IPX-S500/XAR
266	Samsung e-MBMS solution	https://www.scribd.com/document/137753205/Samsung-e-MBMS-solution
267	Samsung eMMC 2013-0	https://www.scribd.com/document/192462814/Samsung-eMMC-2013-0
268	Samsung LTE ENB Alarm	https://www.scribd.com/doc/315159881/Samsung-LTE-ENB-Alarm-Manual-for-PKG-5-0-0-v1-0
269	Samsung LTE ENB Counter Description for PKG 5.0.0_v1.0	https://www.scribd.com/document/328551815/Samsung-LTE-ENB-Counter-Description-for-PKG-5-0-0-v1-0
270	Samsung Lte Epc	https://www.scribd.com/document/227875311/Samsung-Lte-Epc
271	Samsung LTE-U Solution	http://www.samsung.com/global/business/networks/small-cells/small-cells/indoor-small-cells
272	Samsung MBS (LTE) Alarm	https://www.scribd.com/document/269490901/Samsung-MBS-LTE-Alarm-Manual-for-SLR-3-1-v2-0
273	Samsung Mobile Access.pdf	https://www.scribd.com/document/169065746/Samsung-Mobile-Access-pdf
274	Samsung Public Safety LTE Solution 1	https://www.scribd.com/document/342427310/Samsung-Public-Safety-LTE-Solution-1
275	Samsung radio unit	http://www.samsung.com/global/business/networks/radio-access/radio-access/radio-unit

276	Samsung Self Optimization (SSO)	https://web.archive.org/web/20170125202415/http://www.samsung.com/us/business/by-business-size/enterprise-solutions/samsung-enterprise-wifi-advantages
277	Samsung Smart Lte Solution Intelligent	https://www.scribd.com/document/171128334/Samsung-Smart-Lte-Solution-Intelligent
278	Samsung SMART Signage Platform (SSP)	https://web.archive.org/web/20170125024838/http://www.samsung.com/us/business/digital-signage-solutions/smart-signage-platform.html
279	Samsung Witness List	https://www.scribd.com/document/207043783/Samsung-Witness-List
280	Samsung WLAN Controller	http://www.samsung.com/global/business/networks/enterprise-wireless-lan/enterprise-wireless-lan/wlan-controller
281	Samsung WLAN Manager(WEM)	http://www.samsung.com/global/business/networks/enterprise-wireless-lan/enterprise-wireless-lan/wlan-manager
282	Samsung's PS-LTE	http://www.samsung.com/global/business/networks/solutions/solutions/public-safety-lte
283	Samsung's Enterprise cells	http://www.samsung.com/global/business/networks/enterprise-wireless-lan/
284	Samsung's LTE eNodeB (eNB)	https://web.archive.org/web/20160701151751/http://www.samsung.com/global/business/networks/smart-lte/smart-lte/lte-enodeb
285	SCIR-A	https://www.chicagotech.com/products/samsung/compact/
286	SCS-26UC4-Network Extender	http://web.archive.org/web/20120429135251/http://www.samsung.com:80/us/mobile/cell-phones/SCS-26UC4
287	Single RAN Controller	http://www.samsung.com/global/business/networks/single-ran/single-ran/single-ran-controller
288	Small Cell Gateway(SC-GW)	http://www.samsung.com/global/business/networks/small-cells/small-cells/outdoor-small-cells
289	Smart Cache	http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/smart-cache
290	Smart Database	https://web.archive.org/web/20151021024845/http://www.samsung.com/global/business/networks/smart-lte/smart-lte/smart-db

291	Smart eMBMS	http://www.samsung.com/global/business/networks/smart-media-networks/smart-media-networks/smart-embms
292	Smart HetNet	http://www.samsung.com/global/business/networks/solutions/solutions/heterogeneous-networks/
293	Smart LTE	https://web.archive.org/web/20160701151751/http://www.samsung.com/global/business/networks/smart-lte/smart-lte/lte-enodeb
294	Smart Samsung WLAN Solution	https://web.archive.org/web/20170125202415/http://www.samsung.com/us/business/by-business-size/enterprise-solutions/samsung-enterprise-wifi-advantages
295	Smart Scheduler	https://web.archive.org/web/20150327034252/http://www.samsung.com/global/business/networks/smart-lte/smart-lte/smart-scheduler
296	Smart Scheduler	
297	Smart Scheduler controls	http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/
298	Smart SON	http://www.samsung.com/global/business/networks/solutions/solutions/operations-and-management/
299	Smart SON	
300	Softswitch (Wireline)	https://web.archive.org/web/20090124134641/http://www.samsung.com:80/global/business/telecommunication/productType.do?ctgry_group=11&ctgry_type=24
301	Stackable eNodeB	https://web.archive.org/web/20160701151756/http://www.samsung.com/global/business/networks/smart-lte/smart-lte/stackable-enodeb
302	SUBR DA TRAF PROC BD	https://www.chicagotech.com/products/samsung/subr/
303	SUBR DA TRAF PROC DB	https://www.chicagotech.com/products/samsung/subr/
304	SW AND ALM BD	https://www.chicagotech.com/products/samsung/alm/
305	Switch IES-4024GP	http://web.archive.org/web/20150403070532/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/IES-4024GP/XAR

306	Switch IES-4024GP for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/IES-4024GP/XAR
307	Switch IES-4028FP	http://web.archive.org/web/20130801114716/http://www.samsung.com:80/us/business/business-communication-systems/smb-communication-solutions/IES-4028FP/XAR
308	Switch IES-4028FP for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/IES-4028FP/XAR
309	SYS ALM BD ASBY	https://www.chicagotech.com/products/samsung/sys/
310	SYS BLG BD ASBY	https://www.chicagotech.com/products/samsung/sys/
311	SYS CLK GENERATION BD	https://www.chicagotech.com/products/samsung/sys/
312	SYS CLK GENTN BD	https://www.chicagotech.com/products/samsung/sys/
313	SYS MGMT BD	https://www.chicagotech.com/products/samsung/sys/
314	SYS MGMT BD ASBY	https://www.chicagotech.com/products/samsung/sys/
315	SYSTEM CLOCK	https://www.chicagotech.com/products/samsung/sys/
316	TES 1210 VoLTE With Samsung WP-0	https://www.scribd.com/document/225746749/TES-1210-VoLTE-With-Samsung-WP-0

317	Trunk Gateway	https://web.archive.org/web/20090124140643/http://www.samsung.com:80/global/business/telecommunication/productType.do?ctgry_group=11&ctgry_type=26
318	Ubigate iBG Series Convergence Platforms	https://web.archive.org/web/20090124140647/http://www.samsung.com:80/global/business/telecommunication/productType.do?ctgry_group=13&ctgry_type=27
319	Ubigate™ iBG1000	http://web.archive.org/web/20120319034857/http://www.samsung.com/global/business/telecommunication/productInfo.do?ctgry_group=13&ctgry_type=27&b2b_prd_id=438
320	Ubigate™ iBG1003	http://web.archive.org/web/20120319031739/http://www.samsung.com/global/business/telecommunication/productInfo.do?ctgry_group=13&ctgry_type=27&b2b_prd_id=470
321	Ubigate™ iBG1004	http://web.archive.org/web/20120319034613/http://www.samsung.com/global/business/telecommunication/productInfo.do?ctgry_group=13&ctgry_type=27&b2b_prd_id=548
322	Ubigate™ iBG2006	http://web.archive.org/web/20120319033750/http://www.samsung.com/global/business/telecommunication/productInfo.do?ctgry_group=13&ctgry_type=27&b2b_prd_id=436
323	Ubigate™ iBG2016	http://web.archive.org/web/20120319042140/http://www.samsung.com/global/business/telecommunication/productInfo.do?ctgry_group=13&ctgry_type=27&b2b_prd_id=82
324	Ubigate™ iBG3026	http://web.archive.org/web/20120319033329/http://www.samsung.com/global/business/telecommunication/productInfo.do?ctgry_group=13&ctgry_type=27&b2b_prd_id=81
325	UNIV ALM CONT CD	https://www.chicagotech.com/products/samsung/univ/
326	UNIV ALM INTFC CARD	https://www.chicagotech.com/products/samsung/univ/
327	UNIV CHAN ELEM PROCR	https://www.chicagotech.com/products/samsung/univ/

328	UNIV CHAN PCKT DA CD		https://www.chicagotech.com/products/samsung/univ/
329	UNIV CONT PROCR CARD		https://www.chicagotech.com/products/samsung/univ/
330	UNIV DIGL SIG INTFC CD		https://www.chicagotech.com/products/samsung/univ/
331	UNIV E1/T1 INTFC CARD		https://www.chicagotech.com/products/samsung/univ/
332	UNIV ETHNT SW CARD		https://www.chicagotech.com/products/samsung/univ/
333	UNIV FR END RCVR UNIT		https://www.chicagotech.com/products/samsung/univ/
334	UNIV GPS CLK RCVR CARD		https://www.chicagotech.com/products/samsung/univ/
335	UNIV PLATFORM SHL		https://www.chicagotech.com/products/samsung/univ/
336	UNIV PWR DETECTION UN		https://www.chicagotech.com/products/samsung/univ/
337	UNIV RF COMB UNIT		https://www.chicagotech.com/products/samsung/univ/

338	UNIV TRMTR & RCVR CD	https://www.chicagotech.com/products/samsung/univ/
339	Voice Aware Traffic Scheduling	https://web.archive.org/web/20170125202415/http://www.samsung.com/us/business/by-business-size/enterprise-solutions/samsung-enterprise-wifi-advantages
340	Voice-over-LTE (VoLTE)	http://www.samsung.com/global/business/networks/solutions/solutions/voice-over-lte
341	VST LOC REG BD	https://www.chicagotech.com/products/samsung/loc/
342	VST LOC REG BD ASBY	https://www.chicagotech.com/products/samsung/loc/
343	Wall Plate Access Point WDS-A412H for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A412H/XAR
344	WE VoIP Application	http://web.archive.org/web/20141001185701/http://www.samsung.com/us/business/business-communication-systems/unified-communication-solutions/IPX-LSMP/STD
345	Wireless Enterprise Communication Manager	https://web.archive.org/web/20140912054044/http://www.samsung.com/global/business/enterprise-communications/enterprise-communications/wireless-enterprise-solution/IPX-S500/XAR
346	Wireless Gateway (CDMA)	https://web.archive.org/web/20090124140643/http://www.samsung.com:80/global/business/telecommunication/productType.do?ctgry_group=11&ctgry_type=27
347	Wireless Softswitch (CDMA)	https://web.archive.org/web/20090124134641/http://www.samsung.com:80/global/business/telecommunication/productType.do?ctgry_group=11&ctgry_type=26

348	WLAN Access Point WEA302	http://web.archive.org/web/20140727012118/http://www.samsung.com:80/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-A302CI/XAR
349	WLAN Controller WEC8050	http://web.archive.org/web/20141012012803/http://www.samsung.com:80/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-C8050/XAR
350	WLAN Controller WEC8050 for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-C8050/XAR
351	WLAN Controller WEC8500	http://web.archive.org/web/20131003060408/http://www.samsung.com:80/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-C8500/XAR
352	WLAN Controller WEC8500 for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-C8500/XAR
353	WLAN Controllers WEC8500 & WEC8050	http://www.samsung.com/global/business/networks/enterprise-wireless-lan/enterprise-wireless-lan/wlan-controller
354	WLAN Manager WEM	http://web.archive.org/web/20130929153234/http://www.samsung.com:80/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-LM500/STD
355	WLAN Manager WEM for Business	http://www.samsung.com/us/business/business-communication-systems/wireless-enterprise-solutions/WDS-LM500/STD
356	WLAN Self Organizing Network (SON)	http://www.samsung.com/global/business/networks/enterprise-wireless-lan/enterprise-wireless-lan/wlan-controller
357	YTL-Samsung LTE BTS Cluster	https://www.scribd.com/document/324479154/YTL-Samsung-LTE-BTS-Cluster-Test-Procedure-v1-4

and/or the like, directly or contributorily infringe.